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Extent of Use of Learning Packages and Their Acceptance by South Dakota Home Economics Teachers and Pupils

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EXTENT OF USE OF LEARNING PACKAGES AND THEIR ACCEPTANCE BY SOUTH DAKOTA HOME ECONOMICS TEACHERS AND PUPILS

BY

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This thesis is approved as a creditable and independent investigation by a candidate for the degree, Master of Science, and is acceptable as meeting the thesis requirements for this degree, but without implying that the conclusions reached by the candidate are necessarily the conclusions of the major department.

Thesis Adviser / Date

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ABSTRACT

The purpose of this study was to determine the extent to which home economics teachers in South Dakota were using learning packages. A second purpose was to determine teacher and pupil reaction to package teaching and learning.

Of the 200 home economics teachers responding to the teacher questionnaire, 72 or 36 percent indicated they had used learning packages during the 1970-71 school year. There was no significant difference among teachers with varying years of teacher experience as to whether or not they used packages.

CAPSULES were the major source or type of learning package used by home economics teachers in South Dakota. Packages were combined with other methods by the majority of teachers.

A highly significant difference was found among teachers in the extent to which they used various teaching methods with learning packages. A significant difference was also found in the extent to which home economics teachers used the various evaluation techniques with learning packages.

Most frequently listed advantages found in package teaching were largely advantages seen for pupils using learning packages including learning at one's own rate and according to one's own ability level. Increased preparation time was the leading disadvantage.

Pupils were selected on the basis of a random sampling of the 72 teachers using learning packages. Responses of 583 pupils representing twenty schools were evaluated.

The majority of pupils indicated they learned best in small group situations and that they used packages only in home economics classes. The majority of pupils responding felt packages permitted them to learn at one's own rate, to learn what interests one's self, to study in depth, and to spend less time completing a project. Significant differences were found among pupils in different schools for all these factors.

Learning at one's own rate and learning what interests one's self were the advantages most frequently listed by pupils. Grading requirements were the leading disadvantage.

Significant differences were noted among pupils in different schools as to how frequently various evaluation devices were used with learning packages. Significant differences were also found among pupils by school in their use of learning aids combined with learning packages.

Marlene Bleeker Brands, Extent of Use of Learning Packages and Their Acceptance by South Dakota Home Economics Teachers and Pupils. Unpublished Master's Thesis, Brookings, South Dakota: South Dakota State University, 1972.

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CHAPTER I

INTRODUCTION

Innovations in education today emphasize the individualization of learning and independent study. A statement issued as early as 1925 by Balvin and Glaser[1] lends emphasis to this current innovation:

> It has become . . . absurd to expect to achieve uniform results from uniform assignments made to a class of widely differing individuals. Throughout the educational world there has therefore awakened a desire to find some way of adapting schools to the individuals who attend them.

One of the methods of providing for individualized instruction is through independent study. Independent study materials may be as commonplace as study guides and textbooks or as innovative as learning packages. It is the latter, learning packages, which this researcher has investigated as a method of independent study designed to individualize instruction.

Statement of the Problem

The purpose of this study was to determine the extent to which home economics teachers in South Dakota were using learning packages. A second purpose was to denote teacher and pupil reaction to package teaching and learning.

It can be assumed that individual differences do exist, and as

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[1] Dwight A. Allen and Eli Seifman, Editors, The Teacher's Handbook. Glenview, Illinois: Scott, Foresman and Co., 1971, p. 270.

Beggs and Buffie said, ". . . the role[2] of the school is to help each child develop his potential to whatever degree his abilities permit." The methods used to accomplish this role are subject to debate, but this writer assumed that learning packages constitute an acceptable method.

The writer's interest in this subject was aroused through current publications and because of the work being done in the area of learning packages by teachers in the state.

Importance of the Problem

Since learning packages are a recognized innovation in home economics instruction, teachers must become aware of the role they can be expected to perform. By determining the extent to which learning packages are being used by South Dakota home economics teachers and pupils and their reaction to them, the researcher hoped to assess the implications for teacher education.

Research Design

In gathering data for this study, the descriptive survey method was utilized. Questionnaires were sent to all home economics teachers [junior and senior high school level] in South Dakota including those in federally-funded vocational departments and in nonvocational and private school departments. Two hundred and twenty-nine teachers were included, representing 187 schools.

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[2]David W. Beggs, III and Edward G. Buffie, Bold New Venture: Nongraded Schools in Action. Bloomington, Indiana: Indiana University Press, 1968, p. 24.

After determining the number of teachers who were using learning packages during the 1970-71 school year, questionnaires were sent to a random sampling of pupils. A total of 1,095 pupil questionnaires were mailed to the teachers of pupils in 20 schools.

Analyzation of the teacher questionnaire was largely descriptive summary. Chi-square was used to test the following null hypotheses: There was no significant difference among teachers having varying years of experience as to whether or not they used learning packages, there was no significant difference in the extent to which various teaching methods were combined with learning packages, there was no significant difference in the extent to which home economics teachers used the various evaluation techniques with learning packages.

Chi-square was employed extensively to analyze data obtained from pupil questionnaires to determine if there were significant differences among pupils by class and school for factors included in the questionnaire. Means and standard deviation evaluations were done to determine scope of subject areas selected by pupils using CAPSULES. Descriptive summaries analyzed advantages and disadvantages reported by pupils using packages.

Limitations of the Study

The scope of the research was limited to home economics teachers at the junior and senior high school level in South Dakota and to a random sampling of pupils. It is the opinion of this researcher that a more thorough investigation of pupils, perhaps a sampling from each school using packages, may yield more reliable data.

Ambiguity of terminology in the questionnaires may have influenced

responses. Perhaps it would have been wise to use a sample questionnaire prior to mailing the final form, especially in the case of the pupil questionnaire where some confusion arose regarding the overlapping of subject matter areas. The researcher feels that the subject matter area as outlined in the South Dakota Home Economics Curriculum Guide was not specific enough in determining scope of subject areas and would revise this portion of the questionnaire to include more detailed course content.

Characterization of Terms

Independent study: "study[3] carried on with a minimum or a complete absence of external guidance."

Individualized instruction:[4]

> 1. the organization of instructional materials in a manner that will permit each student to progress in accord with his own abilities and interests. 2. the provision of instructional guidance and assistance to individual pupils in accord with their needs.

Learning package: [Shear and Ray] ". . . a self-instructional[5] unit developed for learning one basic concept or idea. . . ." Each package contains behavioral objectives telling the student what to do, materials to use, and the minimum level of performance.

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[3]Carter V. Good, Editor, Dictionary of Education. New York: McGraw-Hill Book Co., Inc., 1959, p. 531.

[4]Ibid., p. 290.

[5]Twyla Shear and Elizabeth Ray, "Home Economics Learning Packages (HELPs)," Journal of Home Economics, 61:768, December, 1969.

Traditional method of teaching:[6] [Keiner]

> Instruction oriented toward a group or class which meets daily at a designated scheduled time. Common assignments are given to all members of the group. Learning experiences are group-oriented, teacher paced, and scheduled at a time convenient to the teacher and the school.

As used in this study, the following terms are defined by the researcher:

Learning aids: devices used for teaching and learning including textbooks, supplementary reading materials, audio-visual equipment and other tactile materials; not including teaching methods such as discussion, role-playing, lecture and similar techniques.

Evaluation device: any device, method or experience used for appraising the status or progress of an individual and implying cooperative evaluation between pupil and teacher, formal and informal evaluation, and employment of means other than standardized instruments.

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[6] Doris L. Keiner, Comparing the Effectiveness of Two Different Methods of Teaching a Self-developed Consumer Education Unit in a Second Year High School Home Economics Class. Unpublished Master's Thesis, Brookings, South Dakota: South Dakota State University, 1971, p. 11.

CHAPTER II

SOME PERTINENT LITERATURE

Current focus on the individual student has resulted in a growing emphasis on independent study. The development of self-directed learners has become a major goal of education, and the school has become a place described by Groeschell[1] as follows:

> . . . a place for students to think and to question, for finding some answers, but in so doing, raising more questions. It is a place where the appetites for learning are whetted, the imagination stimulated, and reasoning challenged.

The purposes of Chapter II were to ascertain the meaning of independent study and individualized instruction, to discover various techniques involved, and to summarize researched and reported results. In addition, the researcher investigated the role of learning packages as an approach to individualized learning through independent study. A further purpose was to evaluate the implications for teacher training in implementing these innovations.

Meaning of Independent Study

Alexander et al. define independent study as ". . . self-directed[2]

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[1]Robert Groeschell, "Curriculum Provisions for Individual Differences," Social Education, 31:417, May, 1967.

[2]William M. Alexander and Vynce A. Hines and Asso., Independent Study in the Secondary Schools. New York: Holt, Rinehart and Winston, Inc., 1967, p. 1.

learning activity." Torrance sees independent study as a ". . . powerful instructional tool . . ." to motivate students and develop skills for continuous learning.[3]

Independent study provides an opportunity for students to assume responsibility for their own learning. Alexander et al.[4] describe specific behavior required of independent learners to include:

> 1. The independent learner undertakes on his own initiative learning tasks that are important to him. 2. He uses sources of information efficiently. 3. He tests out reflectively possible answers, solutions, ideas, to see whether they are adequate. 4. He seeks to apply generalizations from former to new situations. 5. He is not easily discouraged by the difficulty of the learning tasks nor by forces which would have him accept inadequate answers, solutions, and ideas. 6. He enjoys learning and seeks opportunities to learn.

These behavior requirements may imply that only the academically talented can benefit from independent study. However, Brown[5] theorizes that the ordinary student, as well as the talented and creative, can profit and that motivation is the key requirement. Brown[6] describes the independent learner as:

> . . . excited by intellectual freedom, flexibility, challenge, variety in the place of restraint, and open rather than lockstep education. He learns to think in depth as he organizes and directs his own learning experiences.

Independent study in totality is not completely innovative.

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[3] Paul E. Torrance, "Independent Study Used As an Instructional Tool," Education Digest, 33:27, December, 1967.

[4] Alexander and Others, op. cit., p. 4.

[5] B. Frank Brown, "The Nongraded School," Bulletin of the National Association of Secondary School Principals, 47:66, May, 1963.

[6] Ibid.

Alexander et al.[7] delineate the concepts of independent study to include the long-held usage as a substitute for organized instruction, as honors work, and as culminating activity in the form of graduate theses. Somewhat more modern concepts include independent study as contained in correspondence courses and programmed instruction. The more innovative concepts of independent study embody the employment of independent study first as a supplement to large and small group instruction and second, as individualized instruction.

Independent Study as a Means of Individualizing Instruction

The evolution of individualized instruction is based on the assumption stated by Beggs and Buffie that "every[8] student cannot learn all things easily and well." However, merely working independently does not assure that a student is learning in an individualized situation. What then distinguishes an individualized learning program? Baher and Goldberg[9] characterize the individualized learning system this way: [Underscoring by this writer emphasizes key elements.]

> An individualized learning system is a highly flexible system of multiple materials and procedures, in which the student is given substantial responsibility for planning and carrying out his own organized program of studies, with the assistance of his teachers, and in which his progress is determined solely in terms of those plans.

Four areas of individual differences are designated by Abraham

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[7]Alexander and Others, op. cit., pp. 5-9.

[8]David W. Beggs, III and Edward G. Buffie, Editors, Bold New Venture: Nongraded Schools in Action. Bloomington, Indiana: Indiana University Press, 1968, p. 57.

[9]Gail L. Baher and Isadore Goldberg, "The Individualized Learning System," Educational Leadership, 27:775, May, 1970.

Shumsky[10] as knowledge, academic capabilities, social relations and approach to learning. Reisman refers to this last area as "style[11] of learning" and specifies three distinct styles: visual, reading; aural, listening; and physical, doing. These areas of individual differences demand, according to Kapfer,[12] that subject matter must be appropriate to the learner with regard to the following:

> 1. the pace of instruction, 2. the level of difficulty in the instructional material, 3. the relevance of the instructional material to reality as perceived by the pupil, 4. the pupil's level of interest, 5. the individual learning style of the pupil.

Fleck refers to individualization as the process of releasing the ". . . unique[13] potential of the student." Students determine procedures and levels for learning according to their own ability and interests. This requires teachers who are willing to find time to understand and work separately with each pupil. Individualized instruction demands assignments which have many acceptable levels of achievement and which permit more than one correct answer obtainable by more than one acceptable method.

Classrooms and students cease to be mere storehouses for close-ended facts as the students seek satisfactory answers to individually selected

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[10] Abraham Shumsky, In Search of Teaching Style. New York: Appleton-Century-Crofts, 1968, p. 156.

[11] Frank Reismann, "Styles of Learning," National Education Association Journal, 55:15, March, 1966.

[12] Philip Kapfer, "An Instructional Management Strategy for Individualized Learning," Phi Delta Kappan, 49:261, January, 1968.

[13] Henrietta Fleck, "Individualization," Forecast for Home Economics, 11:54, March, 1966.

problems. The ideal meaning of individualized instruction is implied by Beggs and Buffie[14] as follows:

> The rate of a youngster's progress is his rate of accomplishment. The depth of study is his depth of understanding. The breadth of consideration is his breadth of interest. When a student has developed one skill or mastered one concept, he is free to move to the next, regardless of the progress of others or the time of the year. Movement through a varied instructional program is continuous. Success in the mastery of one subject breeds interest in the mastery of another.

Instructional Techniques

In searching the literature, two particular aspects were revealed regarding the instructional techniques: the administrative management of groups of students and the methods of independent study used by the teachers.

Administrative management of groups of students. Although the researcher does not intend to give a detailed account of administrative techniques, it seems wise to mention several such methods which have been found to stimulate independent study and individualized instruction. Flexible and modular scheduling, nongrading, differentiated staffing, team teaching and learning centers are among the recurring terms used in describing school environments which are conducive to independent study and individualized instruction.

Students must be free to move around within a building and to use the facilities available when needed. Two important scheduling features listed by Alexander et al.[15] are:

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[14] Beggs and Buffie, loc. cit.

[15] Alexander and Others, op. cit., p. 62.

1. The schedule must be based on the principle that not all students need the same amount of time in a class or another activity.
2. Scheduling arrangements must permit students to see teachers for conferences about their independent study problems.

Innovative administrative techniques, although complementary, are not absolutes in carrying out a program of independent study as a means of individualized instruction. Tunks supports this view by stating, "Far[16] more important than the schedule is what goes on in the classroom within the available time."

Another feature of administrative scheduling not specifically mentioned above involves grouping of independent learners. Chase[17] summarizes this important requirement by reminding:

> Even when we are concerned with individual needs and consequent provision for growth, we do not neglect the rightful and desirable opportunities for whole-class activities. The sharing of common experiences in a noncompetitive situation adds important values to social living.

Small group work is also vital in providing peer contact and should be an integral part of the independent study program. This can be arranged by the classroom teacher or spontaneously by the pupils themselves. Shared learnings, pupil-assisted learnings and socialization are resultant advantages.

Independent study methods. Clark and Starr note that independent

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[16]Roger Tunks, "Classroom Strategies for Success with Packages," Journal of Secondary Education, 46:210, May, 1971.

[17]W. Linewood Chase, "Providing for Individual Differences: Middle and Upper Grades," Social Education, 31:411, May, 1967.

study materials may be as commonplace as ". . . study[18] and activity guides used by all pupils throughout a unit . . . or for use with a certain book, movie. . . ." A study guide may also contain suggestions and directions for individual learnings.

Programmed learning is a more sophisticated approach to independent study. Since, according to Van Allen, the student is ". . . always[19] in pursuit of answers to questions he did not ask. . . .", this is independent study which may or may not result in individualized learning.

Since the early 1960's, independent study materials have been developed for self-pacing, depth and quest activities. Innovative terms used to describe this instructional method include student units, learning packages, or contracts. Using the term "learning packages", this researcher has reviewed this innovation in detail.

Learning Packages

Ringis defines a learning package simply as a ". . . lesson[20] plan for an individual learner." Georgiades refines and broadens this simple description by defining a package as ". . . a self-contained[21] set of teaching-learning materials designed to teach a single concept or idea for structured individual and independent use in a continuing progress

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[18]Leonard H. Clark and Irving S. Starr, Secondary School Teaching Methods. New York: The MacMillan Co., 1967, p. 175.

[19]Roach Van Allen, "Individualized Instruction or Learning?" The Instructor, 78:33, November, 1968.

[20]Herbert R. Ringis, "What Is an Instructional Package?" Journal of Secondary Education, 46:201, May, 1971.

[21]William Georgiades, "The Advent of Packages," Journal of Secondary Education, 46:199, May, 1971.

school program."

Kapfer[22] identifies eight component parts of learning packages: concepts, instructional objectives [also called behavioral objectives], multi-dimensional learning materials, diversified learning activities, pre-evaluation, self-evaluation, post-evaluation, and quest. Each of these has a unique function. Some packages may also include a rationale which introduces the package.

Ovard states, "A concept[23] is a complete and meaningful idea. . . ." Some concepts may be mastered independently, while others will require knowledge of prerequisite concepts in order to learn the new concept. The course content must be arranged to allow for continuous progress in a logical sequence of concepts.

Behavioral objectives provide a student with reasons for learning. "These[24] objectives must have been internalized and have formulated his understanding of what is expected as the outcome from his efforts with the package," reminds Ringis. Objectives should inform a student what behavior is expected and the minimum level of acceptable performance.

Because pupils have different learning styles, multi-media will be more effective in meeting these individual styles. They will also free the teacher to work with individuals as students use the media independently. The variety in media seems to add spice to learning. Included in the multi-media approach are such teaching aids as films, filmstrips,

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[22]Kapfer, loc. cit.

[23]Glen F. Ovard, Individualizing Instruction and Learning. Provo, Utah: World Wide Association, [no copyright given], p. 3.

[24]Ringis, op. cit., p. 202.

tapes, records, models, charts, pictures, books, pamphlets, overhead transparencies, opaque projectors, microscopes, chalkboards, and other similar aids.

Diversified learning experiences provide alternative routes to accomplish the behavioral objectives and the option to participate in group learning which may be self-organized. Their role is explained by Postlethwait et al.[25] thus:

> . . . a wide variety of teaching-learning experiences are integrated, with provision for individual student differences, and each experience is planned to present efficiently some important aspect of the subject.

Evaluation must be done in terms of the stated behavioral objectives. Lueck et al.[26] stress the role of evaluation to improve learning by stating:

> The work of students is evaluated in order to measure their achievement, uncover reasons for failure, counsel students more intelligently, provide incentives for students, report more objectively on the student's work . . . , and determine the effectiveness of teaching.

Evaluation within learning packages usually includes pretests, self-evaluation, and posttests. The pretest serves as an introduction to the package and performs a placement role, determining the individual's level of entry into a package concept. The posttest provides the teacher and pupil with a means to determine the progress reached in terms of the behavioral objectives and serves as a directive for future learnings.

The importance of self-evaluation is emphasized by Clark and Starr,

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[25] S. N. Postlethwait, J. Novak, and H. Murray, An Integrated Experience Approach to Learning. Minneapolis, Minnesota: Burgess and Co., 1964, p. 5.

[26] William R. Lueck and Others, Effective Secondary Education. Minneapolis, Minnesota: Burgess Publishing Co., 1966, p. 394.

"If evaluation[27] is to be fully effective, and the pupil is to set his goals correctly, the pupil should participate in evaluating his own progress." To accomplish this, pupils can participate in forming behavioral objectives, check their own work, and decide when they are ready to advance. Self-evaluation requires opportunities for frequent pupil-teacher interaction throughout the entire learning activity.

Since, according to Groeschell, ". . . narrow[28] evaluation accompanies limited learning opportunities," it is essential to accompany diversified learning activities with varied evaluation techniques. Among those found to be effective with packages are written tests, oral conferences, observations, rating scales, check lists, problem-situation tests, and projects and themes.

Evaluation must be on an individual basis if the package aims to meet individual needs. Measurements can be quantitative or qualitative. The "quantity standard"[29] as defined by Ovard has five possible routes: two or more unrelated approaches to the same concept, levels of difficulty, rank order presentation of concepts from easy to complex, teacher analysis and prescription of quantity of content and approaches suitable for each pupil, and the quest program. Contracting for grades, a process which allows a pupil to agree with his teacher in advance what grade he will receive and by what route, is a form of quantitative evaluation sometimes combined with learning packages. Qualitative evaluation

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[27]Clark and Starr, op. cit., p. 356.

[28]Groeschell, loc. cit.

[29]Ovard, op. cit., pp. 5-6.

involves the degree of competency desired for each individual. Regardless of the evaluation device or the measurement employed, evaluation is based on self-competition.

Quest activities are usually self-initiated and self-directed learning experiences. They may involve in-depth learnings of a previously studied concept or an entirely new concept. Through these depth opportunities, Jones maintains that "students[30] find themselves spending more time, putting forth greater effort, and experiencing an increased joy in learning a particular subject. . . ."

Representative types of packages and their developers include the following list reported by Ringis:[31]

> IPI (Individually Prescribed Instruction), Learning Research and Development Center, University of Pittsburg, Pittsburg, Pennsylvania;
> LAP (Learning Activity Package), Nova Schools, Ft. Lauderdale, Florida, and Hughson High School, Hughson, California;
> TLU (Teaching-Learning Unit), Westinghouse Learning Corporation, Project PLAN, 2680 Hanover St., Palo Alto, California;
> LP (Learning Packages), Hartford City Schools, Hartford, Connecticut;
> UNIPAC, Teachers UNIPAC Exchange, 1653 Forest Hills Drive, Salt Lake City, Utah.

Lewis[32] adds the following: ISU (Individual Study Units), Wyandanch, Long Island, New York, and CONTRACT, Duluth School District, Duluth, Minnesota. Three additional types of packages are cited by Shear and

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[30]Richard V. Jones, Jr., "Learning Activity Packages: An Approach to Individualized Instruction," Journal of Secondary Education, 43:182, April, 1968.

[31]Herbert R. Ringis, "Where Goes the Package?" Journal of Secondary Education, 46:230, May, 1971.

[32]James Lewis, Jr., Administering the Individualized Instruction Program. West Nyack, New York: Parker Publishing Co., 1971, p. 5.

Ray[33] as follows:

HELPs (Home Economics Learning Packages), American Home Economics Association, 2010 Massachusetts Ave., N. W., Washington, D. C.;
PAK (Penn-Manor Activity Kit), Millerville, Pennsylvania;
KEY (Knowledge, Education, and You), Palmyra, Pennsylvania.

Several home economics departments in South Dakota are using CAPSULES,[34] a learning package program developed by Mrs. Eleanor Cochrane, Department of Home Economics, Brookings High School, Brookings, South Dakota. In addition to these rather well-published types of packages, there are probably numerous similar packages prepared by individual classroom teachers to meet their specific situations.

HELPs are distributed to teachers across the nation through a pooling effort. After a teacher has submitted a required number of self-written packages, she is entitled to purchase packages from the library system. The CAPSULE program has been sold to schools in several states and is introduced to prospective users through a workshop. UNIPACs are also available for purchase.

Problems and limitations have developed in the attempt to implement learning packages. Record keeping becomes a mammoth job and must be kept simple. Whether or not to consider packages as consumable or returnable will influence the cost and production time of the program, although after initial testing and revamping, the package may be viewed as salvagable. The too-often used monolithic approach to the learning goal, reading; the

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[33]Twyla Shear and Elizabeth Ray, "Home Economics Learning Packages (HELPs)," Journal of Home Economics, 61:768, December, 1969.

[34]Eleanor Cochrane, "Reaching Out to Those We Teach," Teacher of Home Economics, National Education Association Journal, 32:18, May, 1969.

amount of teacher time required for developing and writing; and the contribution to pupil boredom if used in isolation are cited by Georgiades[35] as limitations of the learning package. However, Georgiades further states, "Used[36] in combination with a variety of other instructional media and methodology, they [packages] can facilitate 'self-paced' learning and produce a higher level of success for all students."

Results of Research

Educational research is limited in this area because of the fact that independent study as a means of individualizing instruction is relatively new. However, English assumes ". . . that[37] any model that allows teacher talents and time to be used more effectively, enhances learning. . . ."

In a study conducted at Cedar City High School, Cedar City, Utah, Dr. Julian Clair Morris compared an individualized instructional program with the conventional program which had been in operation prior to developing and implementing of the new program. The null hypothesis that differences between the two groups would not be significant led to the following findings and conclusions:[38]

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[35]Georgiades, op. cit., p. 200.

[36]Ibid.

[37]Fenwick English, "Questions and Answers on Differentiated Staffing," Today's Education, National Education Association Journal, 58:54, March, 1969.

[38]Julian Clair Morris, "A Descriptive Analysis and Evaluation of an Integrated Program of Individualized Instruction in Cedar City High School," Dissertation Abstracts. Ann Arbor, Michigan: University Microfilms, January-March, 1969, p. 2937-A.

> In the areas of critical thinking, study habits and attitudes, and library skills, the null hypothesis was rejected in favor of the conventional group. Relative to drop-outs, the null hypothesis was rejected in favor of individualized programs. . . . Of thirteen comparisons, nine were not significant, three favored the conventional and one the individualized. Therefore, it could not be said that one method was better or worse than the other.

In a study designed to plan, teach, evaluate and compare the effectiveness of independent study and traditional classroom teaching, Keiner[39] concluded that there were no significant differences in achievement between the independent and traditional groups based on a comparison of pretest and posttest scores. When comparing amount of time spent in student-teacher conferences, a direct relationship was found between amount of time spent and growth in achievement. Keiner felt that lower-ability students need motivating and that teacher-pupil communication is a positive factor in increased achievement.

The New York State Education Department[40] conducted a research project on independent study to determine if students who were spending a great proportion of time out of class were learning as much as those attending class. The study, carried out at Valhalla High School, Valhalla, New York, compared achievement, school grades, critical thinking, study skills, research and library techniques, originality, and pupils' enthusiasm for school. No significant differences were found in school

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[39] Doris L. Keiner, Comparing the Effectiveness of Two Different Methods of Teaching a Self-developed Consumer Education Unit in a Second Year High School Home Economics Class. Unpublished Master's Thesis, Brookings, South Dakota: South Dakota State University, 1971, pp. 2, 43-4.

[40] Don H. Richardson, "Independent Study: What Difference Does It Make?" Bulletin of the National Association of Secondary School Principals, 51:56-60, September, 1967.

grades, critical thinking or achievement. However, students using the independent study program for the second year showed gains over students in the program for one year. School satisfaction, study habits, and library skills were significantly improved in favor of the independent study group.

An experimental study by Salois evaluated student units to test two null hypotheses[41] as follows:

> Students taught by the experimental method [student units] do not differ from students taught by other methods in their achievement of course goals as shown on the final exam. And, there is no difference in student accomplishment when using the experimental method between groups taught by inexperienced teachers and those taught by experienced teachers in terms of the final test score.

The individual student units with the accompanying teacher guide were compared with the traditional method which was found to utilize one text with few additional references. The differences in mean final exam scores served to reject the null hypothesis in favor of the experimental method and the experienced teachers.

Various considerations were compared in an experimental method using the lecture-discussion method for the control and the independent study methods for the experimental factor. Roberson[42] concluded that:

> Information gain was not significant. Lecture-discussion method requires more time for students to receive instruction. Initial preparation for individual study materials takes more time. Use of individual study will result in substantial saving of time required

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[41] Sister Mary Jeanne Salois, "An Experimental Study to Evaluate the Use of Two Student Units in Homemaking Classes in Catholic Schools," Journal of Home Economics, 54:454, July, 1962.

[42] Ray Parker Roberson, "An Experimental Comparison of Two Methods of Teaching Related Information in Distributive Education at the High School Level," Dissertation Abstracts. Ann Arbor, Michigan: University Microfilms, April-June, 1968, p. 4058-A.

> for co-ordinator. When taught by different methods, attitudes toward a unit may differ. Initial preparation costs of materials for independent study will be higher. . . .

A study reported by Linck[43] implies that independent study programs rely heavily on the library and printed media. He found that most school libraries and instructional materials centers were not adequate for even the traditional approach. The study also revealed involvement of the independent study student in the production of instructional media.

An independent study experiment with emphasis on individualized instruction through multi-media instructional meterials suitable for different ability levels was conducted by Sweet. The six media used to teach eight beginning clothing concepts were audio tapes, books and reading references, filmstrips and slides, flashcards, models, and overhead transparencies. Among the results[44] reported were the following:

> . . . all three ability groups used the instructional media in a general pattern of decreasing time usage from the high ability group to the low ability group . . . models were used the most and the audio tapes were used for the second largest amount of time . . . the high ability group utilized all the instructional media for a greater quantity of time than the other two ability groups.

Sweet believes that ". . . the high[45] ability group's consistent use of the instructional media . . . demonstrates their positive initiative and desire to learn by all of the available methods of instruction." The

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[43]Norman Linck, "Educational Media and Independent Study," Education Digest, 35:31, April, 1970.

[44]Jeanette C. Sweet, Teaching Selected Clothing Concepts Through Independent Study in Beginning Clothing Construction. Unpublished Master's Thesis, Brookings, South Dakota: South Dakota State University, 1970, pp. 2, 31, 35.

[45]Ibid.

importance of pupil-pupil and pupil-teacher interaction was emphasized.

A study conducted by Murphy[46] of the relationship between independent study achievement and the use of time and facilities for such study revealed that students, especially those in low ability groups, need help in planning their study time and in developing better study habits. Students felt their assignments were more in depth and of better quality.

Alexander et al.[47] reported research in which pupil expectations and attitudes toward independent study were measured. Pupils in grades 7-11 had higher expectations than pupils in the twelfth grade of how independent study could increase their interest in school and learning and improve their creative thinking ability. Expectations of students were also higher in nonacademic subject areas than in academic areas using independent study. The longer a student used independent study, the greater his expectations were. Most students wished to continue independent study after initial experience with it.

Student responsibility for learning was researched in relationship to independent study. In a Stanford University study of ninth grade students, McLeod attempted to find some predictors of success in independent study. Answering questions regarding the measurability of student responsibility, its relationship to measured general ability, and its use as a

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[46]Gerand Murphy, "A Study of the Relationship Between Achievement and the Use of Time and Facilities by Students in High Schools Using Staff Utilization and Independent Study Techniques," Dissertation Abstracts. Ann Arbor, Michigan: University Microfilms, January-March, 1968, p. 3566-A.

[47]Alexander and Others, op. cit., pp. 105-6, 109, 117.

predictor of quality performance, the results[48] were summarized as follows:

> The low correlation between general ability and the criterion tasks may suggest that some present practices of assigning students to independent study on the basis of general ability are not defensible. However, student responsibility, particularly as represented by teacher rating, appears to contribute to an understanding of criterion performance in independent study.

Reported Results

Although few schools utilizing independent study can substantiate their practices with experimental research statistics, observations have yielded valuable insights.

Keiner observed that unless students were required to complete quest activities, there was an absence of the element ". . . doing[49] for the fun of learning." Cheating was reported by the pupils. Alexander et al. further detail a negative aspect by affirming, "An indifferent[50] student, to whom the novelty or the opportunity in independent study is unappealing, is a problem student in any kind of independent study plan as in education in general."

Advantages reported by Short et al.[51] from using independent study include allowance for individual difference in ability, experience, and rate of learning; availability of materials for review; and increased pupil

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[48] Jack Donald McLeod, "Prediction of Independent Study Performance in Secondary Schools," Dissertation Abstracts. Ann Arbor, Michigan: University Microfilms, January-March, 1969, p. 3044-A.

[49] Keiner, op. cit., p. 45.

[50] Alexander and Others, op. cit., p. 60.

[51] Sarah H. Short and Others, "Development and Utilization of a Self-Instruction Lab," Journal of Home Economics, 61:40, January, 1969.

attention and enjoyment. According to Unruh,[52] teachers reported working harder but receiving increased satisfaction as instruction was individualized.

Implications for Teacher Education

Independent study and individualized instruction have greatly influenced the roles of teachers. Their role is varied and demanding as illustrated by Wolfe and Smith[53] in the following description:

> The teacher is still a planner of learning activities . . . but also becomes a resource person and counselor to individual students, a specialist in skilled group dynamics, and an administrator of the learning environment.

Groeschell acknowledges individualization as ". . . the most[54] difficult teaching job there is."

What professional skills are necessary to fulfill the innovative teacher's role? Torrance[55] lists the following skills:

1. Recognize and acknowledge potentialities.
2. Respect students questions and ideas.
3. Ask provocative questions.
4. Recognize and value originality.
5. Develop the ability to elaborate.
6. Do not evaluate practice and experimentation.
7. Develop creative readers.
8. Predict behavior accurately.
9. Employ planned, guided experiences.
10. Develop concepts and skills of research.
11. Develop skills of creative problem-solving.

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[52]Glenys G. Unruh, "Can I Be Replaced by a Package?" Educational Leadership, 27:765, May, 1970.

[53]Arthur B. Wolfe and James E. Smith, "At Nova, Education Comes in Small Packages," Nation's Schools, 81:49, June, 1968.

[54]Groeschell, op. cit., p. 418.

[55]Torrance, op. cit., pp. 28-9.

Four prerequisites esteemed essential by Burton[56] if a teacher is to guide learning activities include:

> First, a teacher must have keen, reasonably accurate insight into what is taking place within the learner. Second, a teacher must have equally keen insight into the part played by the objective world of things and persons in bringing about these results within the learner and into the effect the learner has upon the environment. Third, . . . a balanced, integrating personality can achieve satisfactions in many ways without resorting to dominance over others. The fourth necessity is a sincere belief in democracy . . . the teacher will accept the uniqueness of each individual and aid each to develop his capacities . . . according to socially desirable ends and values.

Torrance believes that ". . . successful[57] use of independent study . . . requires professional skills presently beyond the scope of most teachers and rarely taught in teacher education programs." In-service training capitalizing on shared experiences, trained professionals, and skilled innovators can assist teachers to assess the direction and value of independent study practices and to implement desired innovations. Workshops provide another opportunity to gain necessary skills. Jones[58] proposes that a two-week workshop is minimal to develop an initial program of learning packages and that the basic skills can be learned in a two-day workshop if experienced package writers are present.

Conclusion

The critical task of individualizing instruction through independent

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[56] William H. Burton, The Guidance of Learning Activities, Second Edition. New York: Appleton-Century-Crofts, Inc., 1952, pp. 306-7.

[57] Torrance, loc. cit.

[58] Richard V. Jones, "Getting Started Into a Package Program," Journal of Secondary Education, 46:224, May, 1971.

study has begun. The techniques are as numerous as the results; both demand continued research in order to determine if independent study is a significantly better method of instruction. As Horn states, there is ". . . no[59] single teaching strategy [which] will produce self-directed, self-realizing, creative individuals"--the prime goal of education.

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[59]Fern M. Horn, "Using Independent Study in Home Economics," Illinois Teacher for Contemporary Roles, 12:295, Spring, 1968-9.

CHAPTER III

TEACHER SURVEY

The purpose of Chapter III was to review data collected in a survey designed to determine the extent to which home economics teachers in South Dakota were using learning packages during the 1970-71 school year and their reaction to them.

Research Design

The cover letter and questionnaire[1] for this portion of the study were mailed to all home economics teachers, grades seven through twelve, in South Dakota including those in federally-funded vocational departments and those in nonvocational and private school departments. Two hundred and twenty-nine teachers representing 187 schools were included. Cover letters[2] explaining the project had previously been mailed to superintendents and principals involved.

Teacher cooperation was most encouraging to this researcher. Two hundred or 87.3 percent of the teacher questionnaires were returned, representing 160 schools for an 85.6 percent return by schools. Of the 200 teachers responding, 72 or 36 percent indicated they had used learning packages during the 1970-71 school year. The remaining 128 teachers or 64 percent had not used learning packages.

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[1] Refer to Appendix, pp. 153-8.

[2] Refer to Appendix, p. 159.

Analyzation of Data

General information. The first portion of the teacher questionnaire was designed to obtain general information which could then be applied to the question of use of learning packages.

The 160 junior or senior high schools included in this analysis were broken down into size categories in Table I.

TABLE I

SCHOOL SIZE

Enrollment categories	Number of schools
Not given	39
Under 100 pupils	30
101 to 200 pupils	33
201 to 300 pupils	20
301 to 500 pupils	14
Over 500 pupils	24

It was impossible to plot school size against whether or not teachers used learning packages because multiple-teacher departments were not unanimous in their use of packages. However, use of packages according to school size for only those teachers who indicated they had used packages is illustrated in Table II on page 29. Number of teachers in Table II should not be compared with number of schools in Table I because of

multiple-teacher departments.

TABLE II

DISTRIBUTION OF TEACHERS USING PACKAGES ACCORDING TO SCHOOL SIZE

Enrollment categories	Number of teachers
Not given	22
Under 100 pupils	8
101 to 200 pupils	10
201 to 300 pupils	7
301 to 500 pupils	8
Over 500 pupils	17
Total	72

The largest number of teachers using packages who responded to the question of school size were teaching in schools with enrollment over 500 pupils. All other enrollment categories received a fairly equal distribution of teachers who had used packages.

Teachers responding were classified according to years of teaching experience in Table III on page 30 to determine if teaching experience was a significant factor in whether or not they used learning packages.

TABLE III

DISTRIBUTION OF TEACHERS ACCORDING TO YEARS OF EXPERIENCE AND PACKAGE USE

Years of experience	Number of teachers	Used packages	Did not use packages
0	20	2	18
1	25	10	15
2	20	7	13
3	18	5	13
4	12	7	5
5	10	5	5
6	17	3	14
7	11	6	5
8	3		3
9	7	4	3
10	2		2
11	5		5
12	10	5	5
13	4	1	3
14	3	2	1
15	3	2	1
16	5	3	2
17	2		2
18	3	3	
19	1		1
20	3	1	2
21	5	3	2
22	2		2
23	1		1
24	1		1
25	4	2	2
26	1		1
29	1	1	
36	1		1
Totals	200	72	128

Chi-square was used to test the null hypothesis that there was no significant difference among teachers with varying years of teaching experience as to whether or not they used learning packages. Chi-square analysis was used applying the following formula:

$$\chi^2 = \sum \frac{(o - e)^2}{e}$$

o = observed frequencies

e = expected frequencies

With 28 degrees of freedom, the chi-square value of 39.67 was not significant, therefore, there was no basis for rejecting the null hypothesis.

Since writing and revising, record keeping and individualized instruction are apt to consume more of a teacher's time, teacher aids may be a necessary asset to package teaching. Information regarding the number of teacher aids utilized by home economics teachers in South Dakota according to package use was provided in Table IV.

TABLE IV

FREQUENCY OF UTILIZATION OF TEACHER AIDS IN RELATION TO PACKAGE USE

Number of aids	Number of teachers	
	Used packages	Did not use packages
0	49	116
1	19	8
2	3	3
3	1	1
	Total 72	Total 128

Information recorded in Table IV on page 31 showed that approximately one-third or 31.9 percent of the teachers using packages were assisted by teachers aids as compared to only 9.4 percent of those teachers not using packages.

Analyzation of subject area scope for all teachers responding was limited. Subject area scope[3] as used in this study was adapted from the South Dakota Home Economics Curriculum Guide. Omissions were tabulated only when a subject area was not taught by a teacher or teachers in a school at any grade level. Teachers from 21 schools omitted this entire portion of the questionnaire, therefore, information in Table V on page 33 represented omissions of subject areas for the remaining 139 schools. Table V did not indicate the degree to which a subject area was pursued but only whether or not it was completely omitted in a school.

Occupational education was omitted by home economics teachers in 84 schools or by 60.4 percent of the 139 schools tabulated. All other subject areas were omitted by teachers in less than one-third of the 139 schools. Approximately one-fourth of the schools omitted trends and influences and dining out. Home economics teachers in about 13 to 20 percent of the schools represented in Table V did not teach related art, self-expression and interaction, resources and decision making, teenager's world, careers, hospitality, and clothing the family during the 1970-71 school year. Approximately 10 percent of the schools did not include health, safety, babysitting, marriage, and child development and

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[3] South Dakota Home Economics Curriculum Guide. Pierre, South Dakota: Home Economics Education Service, State Division of Vocational-Technical Education, 1968, pp. xiv and xvi.

TABLE V

FREQUENCY OF OMISSIONS OF SUBJECT AREAS
BY SCHOOLS [Grade Levels 7-12]

Subject areas	Number of schools omitting	Percentage omitting
Related art	29	20.9
Self-expression and interaction	24	17.3
Consumer education	5	3.6
Resources and decision making	19	13.7
Health	14	10.1
Safety	14	10.1
Trends and influences	38	27.3
Occupational education	84	60.4
Babysitting	13	9.4
Teenager's world	25	18.0
Marriage	14	10.1
Family living	5	3.6
Child development and behavior	14	10.1
Careers	20	14.4
Nutrition	3	2.2
Kitchen efficiency	5	3.6
Basic skills	8	5.8
Meal planning and preparation	3	2.2
Hospitality	20	14.4
Dining out	32	23.0
Personal appearance	3	2.2
Psychological effect of clothing	8	5.8
Clothing the family	23	16.5
Textiles	8	5.8
Clothing care and equipment	1	0.7
Clothing construction	0	0.0

behavior in their home economics curriculum. All other subject areas were omitted in less than 6 percent of the schools. Clothing construction was the only subject area taught in all of the 139 schools responding to this particular question.

Further analyzation of subject area scope was impossible due to limitations in construction of the questionnaire for the following reasons: First, a teacher using packages may have indicated that she taught a subject area even though only one pupil actually studied in that area, whereas a traditional classroom teacher would not have marked an area unless an entire class studied that particular area. This reason should be taken into consideration when evaluating Table V also. Second, subject area scope according to individual grade level was impossible to determine because failure to respond may have indicated either that the subject area was not taught at a particular grade level or that home economics was not offered at that grade level in a particular school. The questionnaire failed to determine the latter aspect.

Use of packages. The remainder of the teacher questionnaire concerned only those 72 teachers who indicated they had used packages. Twenty-one teachers reported that their department was the only department in their school using learning packages, while 46 teachers reported that other departments at the junior and/or senior high school level were also using packages. Five teachers failed to respond on this matter.

Since success of innovations often depends upon existing practices, teachers were requested to evaluate their school's schedule. Information given by 57 teachers who responded was presented in Table VI on page 35.

TABLE VI

FREQUENCIES OF TEACHERS USING PACKAGES WITH SCHEDULING TECHNIQUES FOUND IN SCHOOLS

Scheduling techniques	Number of teachers
Small group instruction	42
Large group instruction	39
Independent study	57
Varying times for the above techniques	31

Varying times was checked the least frequently indicating that about half of the schools were on lock-step scheduling rather than flexible scheduling. Large group instruction would be more difficult to arrange in an inflexible schedule. Small group instruction and independent study can be accommodated within a regularly scheduled class period or with flexible scheduling.

The portion of the teacher questionnaire designed to evaluate the extent to which home economics teachers in South Dakota were using packages during the 1970-71 school year was analyzed in three parts. Since ten teachers who were using packages omitted this part of the questionnaire, analysis is based on the responses of 62 teachers. However, some of these 62 teachers did not respond to every item listed. The first part concerned subject area scope in relation to teaching methods as shown in Table VII on page 36.

TABLE VII

DISTRIBUTION OF TEACHERS ACCORDING TO TEACHING METHODS BY SUBJECT AREA

Subject area	Not taught this year	Taught by methods other than packages	Taught by packages
Related art	10	19	28
Self-expression and interaction	13	17	29
Consumer education	2	18	37
Resources and decision making	6	20	31
Health	7	22	28
Safety	5	23	27
Trends and influences	7	21	27
Occupational education	31	11	15
Babysitting	8	18	32
Teenager's world	10	19	26
Marriage	14	23	22
Family living	5	25	28
Child development and behavior	4	26	29
Careers	14	15	29
Nutrition	3	18	39
Kitchen efficiency	5	20	34
Basic skills	2	15	43
Meal planning and preparation	2	16	43
Hospitality	6	22	29
Dining out	12	20	25
Personal appearance	1	24	35
Psychological effect of clothing	5	20	33
Clothing the family	9	19	31
Textiles	4	20	34
Clothing care and equipment	3	12	43
Clothing construction	4	15	40

It should be noted that the number of packages used in each subject area was omitted and that any response in the last column indicated only that packages were used for that subject area.

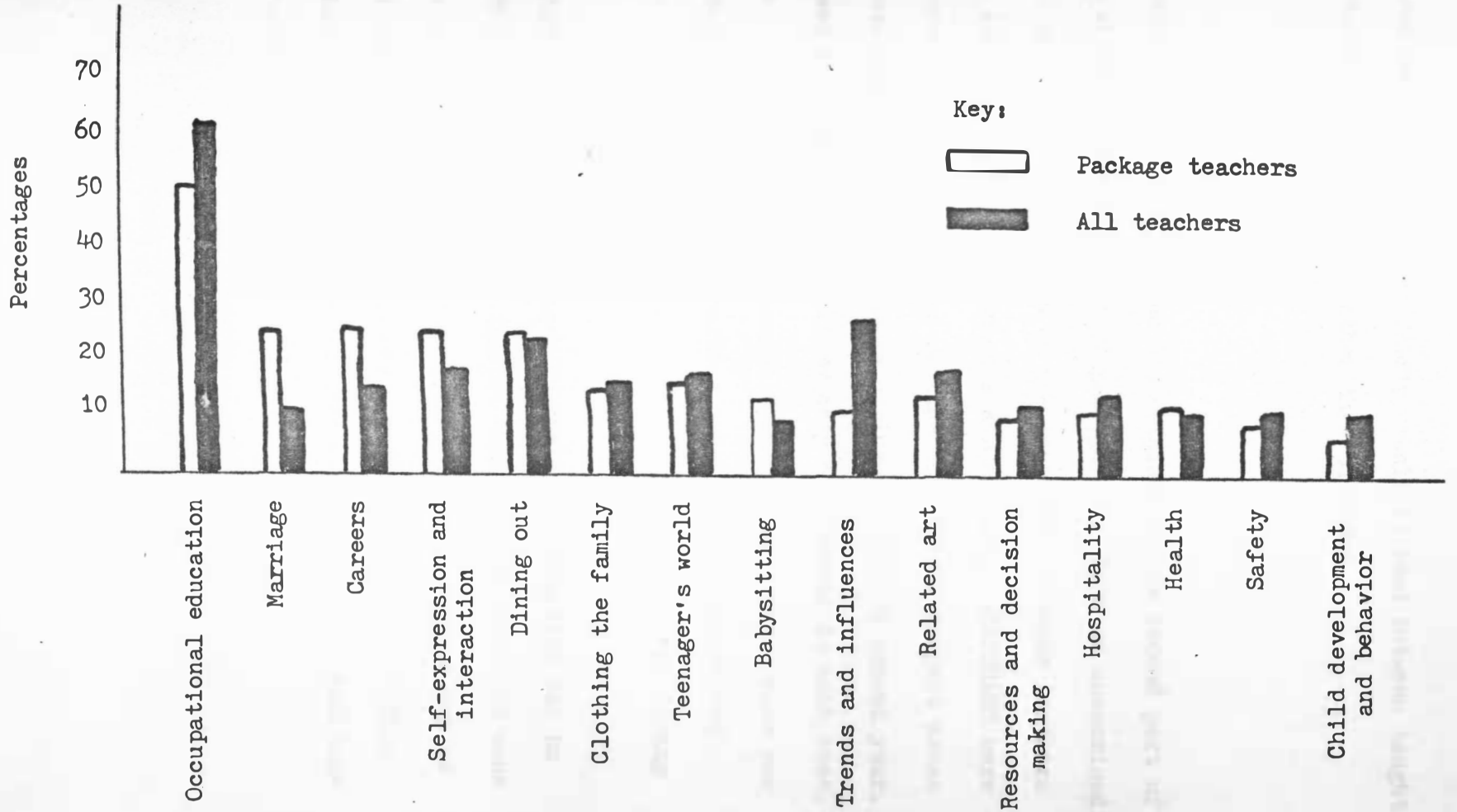
According to data recorded in Table VII on page 36, occupational education was omitted most frequently by package teachers. Marriage, careers, self-expression and interaction and dining out were omitted by approximately 25 percent of those teachers who were using learning packages. Clothing the family, teenager's world, babysitting, trends and influences, related art and health were omitted by 11 to 16 percent of these teachers. About ten percent did not teach resources and decision making or hospitality during the 1970-71 school year. All other subject areas were omitted by less than 10 percent of those teachers using packages.

Omissions reported by the 62 teachers using packages were compared in Figure 1 on page 38 with omissions reported by all 139 teachers responding, which included those who used packages as well as those who did not use packages. [Refer to Table V, page 33.] Noticeably higher percentages of omissions were noted by package teachers for marriage, careers, self-expression and interaction, and babysitting. Obviously higher percentages of omissions by all teachers combined were seen for occupational education, trends and influences, related art, safety, child development and behavior, and hospitality. Percentages of omissions for all other subject areas diagrammed in Figure 1 were similar for both groups.

Marriage was the only subject area taught by other methods by a larger number of teachers than who taught it using packages. Basic skills, meal planning and preparation, clothing care and equipment, clothing construction, nutrition, and consumer education were taught by packages by at least twice as many teachers as taught these areas by other

FIGURE 1

PERCENTAGE OF OMISSIONS OF SELECTED SUBJECT AREAS FOR PACKAGE TEACHERS COMPARED TO ALL TEACHERS



methods. Other subject areas were fairly evenly divided between taught by packages and taught by methods other than packages.

Source of packages or type used was obtained in the second part of the question which evaluated extent of package use. Data as summarized in Table VIII on page 40 were based on the responses of those teachers who had used learning packages to teach a subject area. CAPSULES were the major source or type of learning package used in all subject areas by South Dakota home economics teachers during the 1970-71 school year. HELPs were used in four subject areas by only one teacher in each case. CONTRACTS were used by one or two teachers in several areas. From one to four teachers used UNIPACs for various areas. Self-constructed packages were used by at least one teacher in all areas except dining out.

Application of purchased packages to one's own situation may be necessary. Thirty-five teachers indicated that they had modified some of the purchased packages, while 13 said they had not modified any of the purchased packages. The 24 teachers who did not respond to this question included those who used self-constructed packages in addition to those who omitted this question.

TABLE VIII

DISTRIBUTION OF TEACHERS ACCORDING TO SOURCE OF PACKAGES BY SUBJECT AREAS

Subject areas	Self-constructed	UNIPAC	CONTRACT	CAPSULE	HELP
Related art	6		2	23	
Self-expression and interaction	1	1	1	27	
Consumer education	8	2	2	25	1
Resources and decision making	4	1	1	26	1
Health	1	2	1	23	
Safety	2	1	1	23	
Trends and influences	4		2	23	
Occupational education	1	1		15	
Babysitting	4	2	2	26	
Teenager's world	1	1	1	24	
Marriage	3			20	
Family living	2			26	
Child development	3	1	1	22	
Careers	4		1	25	
Nutrition	7	3	1	28	
Kitchen efficiency	4	2	1	26	
Basic skills	9	4		30	
Meal planning and preparation	9	3		30	
Hospitality	2		1	25	
Dining out			1	24	
Personal appearance	3	1	1	30	
Psychological effect of clothing	3		1	29	1
Clothing the family	1		1	29	1
Textiles	6	1	1	27	
Clothing care and equipment	10	1	1	31	
Clothing construction	7	3	1	29	

Actual degree of usage was the third phase evaluated by the question on extent of package usage in each subject area. The responses of the 62 teachers who answered this question and who taught the subject areas listed were represented in Table IX on page 42. In all but ten of the subject areas, the largest number of teachers combined learning packages with other methods for an entire unit. In three subject areas, resources and decision making, safety, and teenager's world, as many teachers combined packages with other methods as those who used packages alone for an entire unit. A larger number of teachers used packages alone for the entire unit to teach trends and influences, family living, child development and behavior, hospitality, dining out, psychological effect of clothing, and clothing the family. Packages were used either with other methods or alone for just part of a unit by relatively few teachers.

In the review of literature emphasis was placed on the importance of a variety of learning experiences as a means of individualizing independent study. Variety in learning experiences can be equated with variety of teaching methods which were summarized in Table X on page 43 according to extent of utilization. Data recorded represent the responses of 66 teachers who answered this question.

TABLE IX

DISTRIBUTION OF TEACHERS ACCORDING TO EXTENT OF PACKAGE USE BY SUBJECT AREAS

Subject areas	Packages used			
	For entire unit		For part of unit	
	With other methods	Alone	With other methods	Alone
Related art	14	9	1	3
Self-expression and interaction	12	9	3	2
Consumer education	16	10	7	1
Resources and decision making	10	10	7	1
Health	11	10	2	1
Safety	11	11	4	
Trends and influences	8	14	2	1
Occupational education	6	4	2	1
Babysitting	13	11	4	2
Teenager's world	9	9	3	1
Marriage	9	8	3	
Family living	8	10	5	2
Child development and behavior	6	12	4	2
Careers	10	9	3	2
Nutrition	16	11	5	3
Kitchen efficiency	13	12	2	3
Basic skills	18	10	10	2
Meal planning and preparation	18	12	6	3
Hospitality	10	12	3	
Dining out	8	10	2	2
Personal appearance	15	10	5	1
Psychological effect of clothing	12	13	3	2
Clothing the family	12	13	2	1
Textiles	15	11	5	
Clothing care and equipment	17	9	6	7
Clothing construction	16	8	8	2

TABLE X

DISTRIBUTION OF TEACHERS ACCORDING TO EXTENT OF USAGE OF TEACHING METHODS COMBINED WITH PACKAGES

Teaching method	Extent of use		
	Frequently	Seldom	Never
Problem-solving experiences	41	15	1
Lectures	25	32	8
Laboratory experiences	62	4	
Teacher demonstrations	36	24	5
Pupil demonstrations	26	36	3
Field trips	12	38	13
Brain-storming	16	36	10
Panel discussion	10	33	20
Role-playing	9	38	13
Home experiences	40	17	7
Small group instruction	48	14	1
Large group instruction	26	24	7

Chi-square analysis was used to test the null hypothesis that there was no significant difference in the extent to which the various teaching methods were used in combination with learning packages. The chi-square value of 207.14 was significant beyond the .01 level, and the null hypothesis was rejected. Almost all of the teachers combined laboratory experiences with learning packages frequently, whereas more than half of the teachers seldom combined the following methods with packages: lectures, pupil demonstrations, field trips, brain-storming, panel discussions and role-playing. Problem-solving experiences, teacher demonstrations, home experiences, and small group instruction were used frequently by a majority of the teachers responding.

Evaluation practices of teachers using packages. Literature reviewed by this writer implied that varied learning experiences must be accompanied by diversified evaluation techniques. The extent to which home economics teachers in South Dakota used various evaluation techniques with learning packages was reviewed in Table XI. Data are based on the responses of the 66 teachers who completed this portion of the questionnaire.

TABLE XI

DISTRIBUTION OF TEACHERS ACCORDING TO EXTENT OF USAGE OF VARIOUS EVALUATION DEVICES EMPLOYED WITH PACKAGES

Evaluation device	Extent of use			
	Always	Sometimes	Seldom	Never
Homework	17	26	12	6
Worksheets	27	27	5	5
Recitation	15	32	11	5
Anecdotal record	2	19	17	20
Notebooks	10	30	9	14
Behavioral logs	2	16	11	26
Themes	2	12	19	26
Rating scales	9	31	12	10
Check lists	10	35	11	5
Pretest	23	38	4	
Posttest	40	24	1	
Essay test	3	28	14	14
Problem-situation test	5	47	8	3
Objective test	15	29	11	7
Pupil self-evaluation	33	25	6	

Chi-square was used to test the null hypothesis that there was no significant difference in the extent to which teachers used the various evaluation devices with packages. A significant difference was found beyond the .01 level with a chi-square value of 326.52. Therefore, the null hypothesis was rejected.

Pretest, posttest, and pupil self-evaluation were used by all the teachers answering. A majority of teachers always used posttest and pupil self-evaluation with packages. Worksheets were used equally by 27 teachers always and sometimes. A larger number of teachers sometimes used homework, recitation, notebooks, rating scales, check lists, pretests, essay tests, problem-situation tests, and objective tests with learning packages than those who used them often or never. Anecdotal records, behavioral logs and themes were never used by a larger number of teachers than used them to any other extent.

Teacher satisfaction. Several factors were analyzed in attempting to determine teacher satisfaction with learning packages including advantages and disadvantages, comparisons with traditional classroom teaching, and future plans for using packages.

Advantages found in using packages as listed by the 65 teachers responding to this open-end question were summarized in Table XII on page 46.

TABLE XII

ADVANTAGES LISTED BY TEACHERS USING PACKAGES

Advantage	Number of teachers
Personal advantages for pupils:	
Learn at own rate	27
Learn what interests self	11
Study in depth	15
Learn according to own ability	23
Meet individual needs	9
Study independently	2
Increased student responsibility	22
Package characteristics:	
Adaptable to situation	1
Convey information without using class time	2
Interesting	6
Teach specifics	1
Clear directions	1
Develop decision-making skills	2
Classroom management:	
More efficient use of resources	12
Easier to handle absentees	5
Easier to handle large classes	5
More home project learnings	2
Improved evaluation	7
Less discipline problems	1
Results of use for pupils:	
Increased creativity	4
Increased motivation	5
Retain information better	2
Greater group interaction	2
Advantages for teacher:	
More time to help individual pupil	11
Closer pupil-teacher relationships	4
Use summers for preparation	1
Improved teaching skills	3
Time to prepare other materials	1
Greater satisfaction	1
Less pre-planning	1
Total responses	189

Sixty-five teachers contributed the 189 responses to this open-end question.

The rank order and percentages for the ten most frequently listed advantages were given in Table XIII. Learning at one's own rate was the advantage listed most frequently by teachers. Learning according to one's own ability level was second, followed closely by the advantage of increased student responsibility. All other ranked advantages received less than ten percent of the total number of responses.

TABLE XIII

RANK ORDER OF TEN MOST FREQUENTLY LISTED ADVANTAGES

Advantage	Number of teachers listing	Percent of total responses
Pupil learns at own rate	27	14.3
Pupil learns according to own ability	23	12.2
Increased student responsibility	22	11.6
Pupils study in depth	15	7.9
More efficient use of resources	12	6.3
Pupil learns what interests self	11	5.8
More time to help individual pupil	11	5.8
Meet individual needs	9	4.8
Improved evaluation	7	3.7
Interesting	6	3.1
Total percentage for ranked advantages		75.5
Total percentage for all other advantages		24.5
	Total	100.0

Percent of total simply represents the percent of total responses [189] to the open-end question of advantages noted by teachers from using packages. It does not reflect percentage of teachers listing the particular advantage.

Disadvantages found in package teaching as listed by the 65 teachers responding to this open-end question were recorded in Table XIV beginning on this page and continued on page 49. Rank order and percentages of the ten most frequently mentioned disadvantages listed by teachers were given in Table XV on page 50.

TABLE XIV

DISADVANTAGES LISTED BY TEACHERS USING PACKAGES

Disadvantages	Number of teachers
Personal disadvantages for pupils:	
Some unable to work independently	5
Harder for slow learners	8
Fast pupil waits for slow to catch up	2
Package characteristics:	
Disliked by pupils	4
Not always applicable to situation	6
Too much writing	1
Boring	4
Harder to evaluate	3
Less class discussion	1
Classroom management:	
Lack of resources	5
Require more money	2
More supplies needed	2
More teaching aids needed	1
Requires much organization	2
Difficult to keep track of pupil's progress	2
Hard to schedule field trips	1

TABLE XIV (continued)

Disadvantages	Number of teachers
Results of use for pupils:	
Pupils choose easy packages	1
Pupils miss basic points	7
Copying	3
Pupil less motivated	14
Pupils get behind	1
Quality of work poor	5
Some afraid to seek help	3
Disadvantages for teacher:	
Increased preparation	17
Much record keeping involved	7
Increased time correcting papers	5
Less pupil-teacher relations	5
Difficult to keep abreast of all levels at once	4
More energy required	5
Increased time needed for revision	5
Difficult to arrange conferences	4
Teacher aid needed	4
Lack of packages available	1
More supervision required	2
Total responses	142

Sixty-five teachers contributed the 142 responses to this open-end question.

TABLE XV

RANK ORDER OF TEN MOST FREQUENTLY LISTED DISADVANTAGES

Disadvantages	Number of teachers listing	Percent of total responses
Increased preparation time	17	12.0
Pupil less motivated	14	9.9
Harder for slow learners	8	5.6
Pupils miss basic points	7	4.9
Much record keeping involved	7	4.9
Not always applicable to situation	6	4.2
Some unable to work independently	5	3.5
Lack of resources	5	3.5
Quality of work poor	5	3.5
Increased time correcting papers	5	3.5
Less pupil-teacher relations	5	3.5
More energy required	5	3.5
Difficult to arrange conferences	5	3.5
Total percentage for ranked disadvantages		66.0
Total percentage for all other disadvantages		34.0
	Total	100.0

Percent of total simply represents the percent of total responses [142] to the open-end question of disadvantages noted by teachers from using packages. It does not reflect percentage of teachers listing the particular disadvantage.

Only one disadvantage, increased time needed for preparation of learning packages, received more than ten percent of the total number of responses. Almost ten percent of the total responses was received for the disadvantage that the pupil is less motivated. All other disadvantages received a gradually decreasing percentage of the total number of responses.

Percentages of total responses for conflicting advantages and disadvantages listed by teachers were compared in Figure 2 on page 52. Percentages of total advantages listed by teachers for learning at one's own rate and learning according to one's own ability were considerably higher than the percentages of disadvantages. Based on this comparison, learning at one's own rate was the only real, little-challenged advantage. Learning according to one's own ability was not quite as strong an advantage. That packages were not always applicable to one's situation was the least challenged disadvantage. Percentages of total disadvantages for less pupil motivation, less pupil-teacher relations, and some pupils unable to study independently also exceeded percentages for their corresponding advantages.

In order to compare teacher satisfaction derived from teaching with learning packages with traditional classroom teaching, teachers who used packages rated a list of factors involved. Results were tabulated in Table XVI for the 65 teachers responding.

FIGURE 2

COMPARISONS OF PERCENTAGES OF TOTAL RESPONSES FOR CONFLICTING ADVANTAGES AND DISADVANTAGES LISTED BY TEACHERS

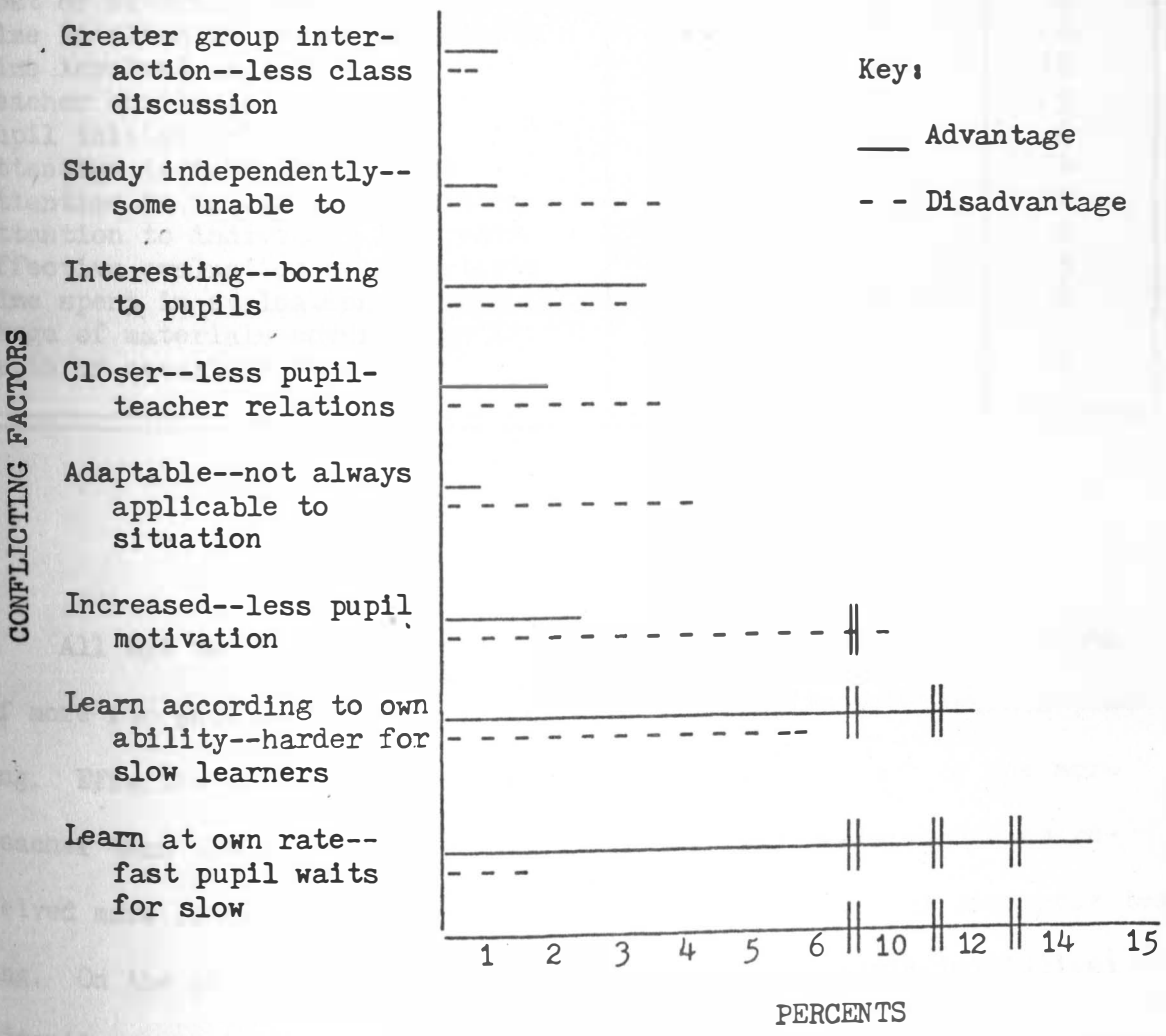


TABLE XVI

FREQUENCY DISTRIBUTION OF TEACHERS WHEN RATING FACTORS COMPARING PACKAGE TEACHING WITH TRADITIONAL CLASSROOM TEACHING

Factor	More	Same	Less
Amount of teaching materials used	45	16	1
Cost of materials used	24	31	8
Time involved in preparing materials	48	9	6
Time involved in teaching	28	18	16
Teacher challenge	55	8	1
Pupil initiative	45	12	6
Attention to individual needs	51	9	4
Attention to individual abilities	59	5	1
Attention to individual interests	54	8	2
Effective evaluation of objectives	28	29	5
Time spent in evaluating	36	22	6
Range of materials covered	40	17	7
Depth of materials covered	33	19	9

All but two of the factors listed in Table XVI received a rating of more for package teaching as compared to traditional classroom teaching. Effective evaluation of objectives was rated "same" by one more teacher than those rating it "more". Cost of materials used also received more ratings of "same" when compared to traditional classroom teaching. On the positive side, more teacher challenge; pupil initiative; attention to individual needs, abilities, and interests; and range and depth of materials covered contributed to teacher satisfaction. More teaching materials used, more time involved in preparing materials, more time involved in teaching, and more time spent in evaluating may be factors decreasing teacher satisfaction with package teaching depending

upon availability of teacher aids, class load, personal stamina, and other situational elements.

The majority of teachers using learning packages during the 1970-71 school year had used them one to two years. The break-down according to number of semesters packages had been used by the 62 teachers responding to this question was given in Table XVII.

TABLE XVII

DISTRIBUTION OF TEACHERS ACCORDING TO NUMBER OF SEMESTERS OF PACKAGE TEACHING

Number of semesters	Number of teachers
1	2
2	26
3	2
4	20
5	
6	10
7	
8	2

Home economics teachers in South Dakota reported from one to eight semesters of experience with package teaching. When asked if they would continue to use packages the next school year, 64 [88.9 percent of those who had used packages] indicated they planned to use packages the next school year, while three [4.2 percent] said they did not plan to use

packages, and five [6.9 percent] did not respond. The 11.1 percent who did not plan to use packages or who did not respond may have included some who did not plan to continue teaching.

Forty-six teachers [63.9 percent of those who had used packages during the 1970-71 school year] indicated they would make improvements in their package teaching. Their suggestions were categorized in Table XVIII. Some teachers listed more than one improvement. Improvements in the packages themselves and in accompanying teaching-learning aids were suggested most frequently.

TABLE XVIII

DISTRIBUTION OF TEACHERS ACCORDING TO SUGGESTED IMPROVEMENTS FOR PACKAGE TEACHING

Improvements suggested	Number of teachers listing
Improve storage and filing techniques	3
Improve resources including audio-visuals	10
Change methods of evaluation	4
Rewrite, update, add packages	20
Change program requirements	8
Increase use of packages	7
Write own packages	3
Combine with other teaching methods	3

CHAPTER IV

PUPIL SURVEY

The purpose of Chapter IV was to review data collected in a survey designed to determine pupil reaction to learning packages and the extent to which pupils were using learning packages in home economics classes in South Dakota during the 1970-71 school year.

Research Design

Pupils were selected on the basis of a random sampling of the 72 teachers using learning packages. Because of the diversified backgrounds of their students, teachers in state-supported schools were eliminated prior to sampling. The original plan divided the state according to the six vocational districts[1] with three non-vocational or vocational home economics teachers to be drawn from each district. Two additional teachers were to be drawn from private schools at large for a total of 20 teachers. This plan resulted in a very uneven distribution of teachers due to population concentrations. Therefore, the modified plan for sampling combined Districts V and VI with three teachers drawn from this group. Six teachers were drawn from District I to compensate for the larger number of package teachers in this area. Three teachers were drawn from Districts II, III, and IV plus two at large from private

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[1] Bureau of Field Studies and Surveys, College of Education, University of Minnesota, We Can't Say No: A Summary of Education: South Dakota. Pierre, South Dakota: Department of Public Instruction, [no c. given], p. 5. Refer to Appendix p. 168.

schools. No school was chosen twice. This gave a random sampling of 20 teachers using learning packages all of whose pupils using packages were selected to complete a pupil questionnaire.

Introductory letters[2] were mailed to superintendents of the 20 schools selected to inform them of the study and to seek their assistance in returning questionnaires. At the same time, cover letters[3] along with a copy of instructions for administering the questionnaire were sent to the 20 teachers selected. Questionnaires[4] were mailed to these teachers for the number of pupils using learning packages, as indicated by the teacher in the teacher questionnaire.

Percentage of response to the pupil questionnaire was given in Table XIX on page 58. A total of 1,095 pupil questionnaires were mailed with a return of 69.5 percent. About one-fourth of those returned were not included in this analysis because responses were incomplete. Therefore, data reported in this chapter were based on 583 pupil questionnaires or 53.2 percent of the total mailed. This somewhat limited percentage of return should be noted in relation to data presented in this chapter.

In order to determine that no bias was present due to the pupil questionnaires which had not been returned, letters[5] were mailed to 15 teachers who had not returned 20 percent or more of their questionnaires. Follow-up information was reported in Table XX on page 59.

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[2] Refer to Appendix, p. 160.

[3] Refer to Appendix, pp. 161-2.

[4] Refer to Appendix, pp. 163-6.

[5] Refer to Appendix, p. 167.

TABLE XIX

PERCENTAGE OF RESPONSE BY SCHOOL TO PUPIL QUESTIONNAIRE

School code	District	Number mailed	Number not returned	Percent not returned	Number omitted	Percent omitted	Number coded	Percent coded
7	V & VI	70	20	28.6	4	5.7	46	65.7
8	I	48	1	2.1	7	14.6	40	83.3
9	III	157	58	36.9	9	5.7	90	57.3
16	II	15	3	20.0	3	20.0	9	60.0
19	II	31	21	67.7	5	16.1	5	16.1
21	V & VI	25	1	4.0	9	36.0	15	60.0
25	I	70	17	24.2	12	17.1	41	58.5
28	I	29	29	100.0		(Lost in the mail)		
31	III	60	17	28.3	3	5.0	40	66.7
32	I	47	17	36.2	10	21.2	20	42.6
35	IV	50	26	52.0	11	22.0	13	26.0
38	II	29	14	48.3	3	10.3	12	41.4
43	IV	101	31	30.7	29	28.7	41	40.6
44	V & VI	35	2	5.7	5	14.3	28	80.0
46	I	85	18	21.2	7	8.2	60	70.6
51	I	54	18	33.3	15	27.8	21	38.9
54	IV	80	24	30.0	18	22.5	38	47.5
55	III	17	4	23.5	3	17.6	10	58.8
57	private	30	11	36.7	17	56.7	2	6.7
59	private	62	2	3.2	8	12.9	52	83.9
Totals		1095	334		178		583	

1095 - 334 not returned = 761 returned or 69.5 percent
Of the 761 returned, 178 were omitted leaving 583 coded or 76.6 percent of those returned.
1095 - (334 not returned + 178 omitted) = 583 or 53.2 percent coded

TABLE XX

REASONS FOR NOT RETURNING PUPIL QUESTIONNAIRES

School code	Number not returned	Reason by letter category
7	20	h
9	58	c (Boys omitted)
16	3	h
19	21	d (Home Ec II only)
25	17	g
31	17	a
32	17	d (Home Ec II only)
35	26	a
38	14	b
43	31	e (Junior high omitted)
46	18	f
51	18	a
54	24	b
55	4	h
57	11	b

Reasons for not returning pupil questionnaires were categorized as follows and reported in Table XX above:

a. Absence, and not all of the total number indicated previously in the teacher questionnaire had used packages;
b. Not all of the total number indicated previously had used packages;
c. Teacher selected participating pupils, and not all of the total number indicated previously had used packages;
d. Teacher selected participating pupils;
e. Absence, and teacher selected participating pupils;
f. Absence and pupils failed to return questionnaires to teacher;
g. Pupils not available due to class change at semester;
h. No response.

Four teachers selected classes participating, accounting for approximately 12% of the questionnaires not returned. However, allowances must also be made for absences in two of these four schools. Approximately one-third of the questionnaires were not returned because of teacher selection of participants. However, this selection was done prior to administering the questionnaires and not on the basis of pupil responses. Therefore, there is no reason to expect bias.

Analyzation of Data

The purpose of this survey of pupils using learning packages was to determine if there were significant differences among pupils in various schools and according to class or grade level for the factors included in the questionnaire. It was not the intent of this researcher to single out one particular grade level or school. Chi-square analysis was used extensively.

Use of learning packages. The first part of the pupil questionnaire was designed to determine the extent to which pupils in the various schools were using packages for the subject areas adapted from the South Dakota Home Economics Curriculum Guide. Only those 13 schools which utilized free choice of CAPSULES were included in this analyzation. Reasons for this limitation were twofold: First, CAPSULES[6] were the major source or type of learning package used in all subject areas by South Dakota home economics teachers; second, only those programs permitting a pupil to select packages [thus CAPSULES] in all subject areas could be

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[6]Refer to Table VIII, p. 40.

analyzed for scope of pupil selections. Mean and standard deviation evaluations were done for each subject area by schools included. No chi-square analysis was made of this portion of the questionnaire. The following equation was applied:

$$SD = \sqrt{\frac{\sum x^2}{N - 1}}$$

x = deviation of number of packages used from over-all mean

N = number of pupils

Mean number of packages used by pupils and standard deviations for each subject area were recorded in Table XXI on pages 62 to 71.

TABLE XXI

MEAN NUMBER OF PACKAGES USED BY PUPILS AND STANDARD DEVIATIONS

Subject areas	School code	Number of pupils	Mean	Standard deviation
Related art	7	44	0.11	0.44
	8	40	1.27	1.57
	9	90	1.12	2.15
	19	5	0.0	0.0
	21	15	4.20	3.71
	31	40	0.07	0.27
	35	13	1.62	2.06
	43	41	1.98	2.38
	44	28	1.93	3.77
	51	21	1.33	1.28
	54	38	2.55	2.69
	57	2	1.50	0.71
	59	52	1.54	2.52
Self-expression and interaction	7	44	0.27	1.00
	8	40	3.92	3.13
	9	90	0.33	0.62
	19	5	2.40	1.52
	21	15	5.33	3.64
	31	40	0.22	0.70
	35	13	9.15	5.86
	43	41	5.71	4.26
	44	28	2.86	2.55
	51	21	0.90	1.37
	54	38	3.76	2.94
	57	2	0.50	0.71
	59	52	1.83	2.61

TABLE XXI (continued)

Subject areas	School code	Number of pupils	Mean	Standard deviation
Consumer education	7	44	0.05	0.21
	8	40	0.27	0.60
	9	90	1.71	2.60
	19	5	0.20	0.45
	21	15	1.53	2.92
	31	40	0.72	1.01
	35	13	0.77	1.69
	43	41	1.05	1.73
	44	28	1.00	1.05
	51	21	0.48	0.93
	54	38	1.45	1.80
	57	2	0.0	0.0
	59	52	0.75	1.30
Resources and decision making	7	44	0.36	1.22
	8	40	0.67	1.44
	9	90	1.31	1.46
	19	5	1.60	1.52
	21	15	3.40	3.20
	31	40	0.65	1.23
	35	13	4.00	3.96
	43	41	3.27	3.01
	44	28	2.89	3.06
	51	21	1.95	1.40
	54	38	2.57	2.40
	57	2	0.50	0.71
	59	52	1.13	1.46
Health	7	44	0.80	1.09
	8	40	0.47	1.09
	9	90	2.07	1.88
	19	5	1.60	1.14
	21	15	2.07	1.87
	31	40	0.45	0.96
	35	13	2.23	1.92
	43	41	3.41	2.76
	44	28	1.71	1.88
	51	21	0.33	0.80
	54	38	1.66	1.49
	57	2	1.50	2.12
	59	52	1.73	1.65

TABLE XXI (continued)

Subject areas	School code	Number of pupils	Mean	Standard deviation
Safety	7	44	0.45	0.76
	8	40	0.35	0.66
	9	90	0.39	0.93
	19	5	1.20	1.30
	21	15	1.33	1.40
	31	40	0.75	0.90
	35	13	0.85	1.46
	43	41	1.51	1.95
	44	28	1.61	1.10
	51	21	0.52	0.60
	54	38	1.34	1.62
	57	2	0.50	0.71
	59	52	1.46	1.47
Trends and influences	7	44	0.11	0.39
	8	40	0.60	1.43
	9	90	0.11	0.46
	19	5	0.0	0.0
	21	15	0.67	1.23
	31	40	0.15	0.53
	35	13	0.38	1.39
	43	41	0.24	0.58
	44	28	0.43	1.26
	51	21	0.0	0.0
	54	38	1.11	1.61
	57	2	2.00	2.83
	59	52	0.56	1.58
Occupational education	7	44	0.0	0.0
	8	40	0.08	0.27
	9	90	0.09	0.32
	19	5	0.0	0.0
	21	15	0.0	0.0
	31	40	0.47	0.75
	35	13	0.31	0.85
	43	41	0.12	0.51
	44	28	0.07	0.26
	51	21	0.0	0.0
	54	38	0.0	0.0
	57	2	0.0	0.0
	59	52	0.35	0.97

TABLE XXI (continued)

Subject areas	School code	Number of pupils	Mean	Standard deviation
Babysitting	7	44	0.77	1.05
	8	40	0.20	0.41
	9	90	0.20	0.43
	19	5	1.80	1.64
	21	15	0.33	0.49
	31	40	0.72	1.13
	35	13	0.0	0.0
	43	41	0.73	0.92
	44	28	0.68	0.67
	51	21	0.24	0.44
	54	38	1.34	0.85
	57	2	0.50	0.71
	59	52	0.69	1.00
Teenager's world	7	44	0.27	0.79
	8	40	0.88	1.91
	9	90	1.43	1.84
	19	5	1.20	1.79
	21	15	0.0	0.0
	31	40	0.17	0.50
	35	13	0.62	1.19
	43	41	0.24	0.89
	44	28	0.32	0.67
	51	21	0.24	0.54
	54	38	1.39	2.09
	57	2	1.00	1.41
	59	52	1.52	2.94
Marriage	7	44	0.09	0.36
	8	40	0.15	0.48
	9	90	0.33	0.83
	19	5	0.80	0.84
	21	15	0.13	0.35
	31	40	0.05	0.32
	35	13	0.0	0.0
	43	41	0.20	0.51
	44	28	0.14	0.45
	51	21	0.19	0.68
	54	38	0.26	0.69
	57	2	0.0	0.0
	59	52	0.79	2.20

TABLE XXI (continued)

Subject areas	School code	Number of pupils	Mean	Standard deviation
Family living	7	44	0.05	0.21
	8	40	0.22	0.53
	9	90	0.64	1.19
	19	5	1.20	1.30
	21	15	0.40	0.74
	31	40	0.55	1.11
	35	13	0.0	0.0
	43	41	0.41	1.16
	44	28	0.64	0.87
	51	21	1.38	2.11
	54	38	1.76	1.75
	57	2	1.00	1.41
	59	52	1.12	2.25
Child development	7	44	0.18	0.39
	8	40	0.70	1.32
	9	90	1.02	1.97
	19	5	1.00	1.00
	21	15	1.07	1.33
	31	40	0.88	1.22
	35	13	0.31	0.63
	43	41	1.12	2.16
	44	28	1.18	3.09
	51	21	0.52	0.98
	54	38	0.84	1.46
	57	2	0.50	0.71
	59	52	1.21	1.26
Careers	7	44	0.0	0.0
	8	40	0.10	0.30
	9	90	0.34	2.30
	19	5	0.80	1.79
	21	15	0.20	0.77
	31	40	1.10	1.01
	35	13	0.0	0.0
	43	41	0.07	0.35
	44	28	0.04	0.19
	51	21	0.14	0.36
	54	38	0.29	1.63
	57	2	0.0	0.0
	59	52	0.73	1.07

TABLE XXI (continued)

Subject areas	School code	Number of pupils	Mean	Standard deviation
Nutrition	7	44	1.39	2.01
	8	40	0.82	2.16
	9	90	0.67	1.50
	19	5	1.20	2.68
	21	15	1.67	2.82
	31	40	4.45	4.02
	35	13	1.62	1.98
	43	41	1.63	3.08
	44	28	2.14	2.80
	51	21	1.48	2.87
	54	38	2.63	2.31
	57	2	2.50	2.12
	59	52	0.96	1.30
Kitchen efficiency	7	44	0.80	1.11
	8	40	0.27	0.72
	9	90	0.77	0.91
	19	5	1.60	3.05
	21	15	1.67	2.87
	31	40	1.20	1.44
	35	13	2.31	3.57
	43	41	0.78	1.06
	44	28	0.75	1.04
	51	21	0.48	0.87
	54	38	0.84	1.10
	57	2	0.50	0.71
	59	52	1.44	1.82
Basic skills with food	7	44	3.39	4.61
	8	40	0.85	1.94
	9	90	7.43	5.48
	19	5	0.40	0.89
	21	15	2.60	4.17
	31	40	5.70	4.35
	35	13	3.77	5.49
	43	41	0.73	1.92
	44	28	1.07	1.49
	51	21	2.14	4.42
	54	38	1.02	1.79
	57	2	1.50	0.71
	59	52	3.40	5.27

TABLE XXI (continued)

Subject areas	School code	Number of pupils	Mean	Standard deviation
Meal planning and preparation	7	44	2.16	3.26
	8	40	0.92	1.38
	9	90	0.58	0.97
	19	5	2.89	1.92
	21	15	1.40	2.06
	31	40	3.07	3.24
	35	13	1.15	1.07
	43	41	0.27	0.78
	44	28	1.75	2.03
	51	21	3.57	4.21
	54	38	1.53	1.56
	57	2	4.00	5.66
	59	52	1.90	3.48
Hospitality	7	44	0.0	0.0
	8	40	0.30	0.72
	9	90	0.37	0.68
	19	5	0.0	0.0
	21	15	0.47	1.30
	31	40	0.22	0.48
	35	13	0.15	0.38
	43	41	0.20	0.60
	44	28	0.29	0.85
	51	21	0.14	0.48
	54	38	0.79	1.79
	57	2	0.0	0.0
	59	52	0.33	0.68
Dining out	7	44	0.07	0.25
	8	40	0.02	0.16
	9	90	0.09	0.29
	19	5	0.60	0.89
	21	15	0.13	0.52
	31	40	0.22	0.48
	35	13	0.0	0.0
	43	41	0.02	0.16
	44	28	0.07	0.26
	51	21	0.05	0.22
	54	38	0.26	0.50
	57	2	0.50	0.71
	59	52	0.06	0.24

TABLE XXI (continued)

Subject areas	School code	Number of pupils	Mean	Standard deviation
Personal appearance	7	44	1.41	2.30
	8	40	0.07	0.35
	9	90	0.97	1.50
	19	5	1.80	1.30
	21	15	1.27	1.79
	31	40	1.97	1.94
	35	13	0.10	1.29
	43	41	1.00	1.36
	44	28	0.82	0.98
	51	21	0.24	0.54
	54	38	2.00	1.74
	57	2	1.00	1.41
	59	52	1.42	1.47
Psychological effect of clothing	7	44	0.05	0.21
	8	40	0.02	0.16
	9	90	0.03	0.18
	19	5	0.80	0.84
	21	15	0.13	0.52
	31	40	0.45	0.68
	35	13	0.08	0.28
	43	41	0.29	0.93
	44	28	0.18	0.48
	51	21	0.05	0.22
	54	38	0.53	0.98
	57	2	1.00	1.41
	59	52	0.21	0.67
Clothing the family	7	44	0.0	0.0
	8	40	0.15	0.43
	9	90	0.07	0.39
	19	5	0.80	1.30
	21	15	0.0	0.0
	31	40	0.77	2.27
	35	13	0.0	0.0
	43	41	0.37	1.24
	44	28	0.25	0.89
	51	21	0.0	0.0
	54	38	0.37	0.82
	57	2	0.50	0.71
	59	52	0.31	0.88

TABLE XXI (continued)

Subject areas	School code	Number of pupils	Mean	Standard deviation
Textiles	7	44	0.09	0.29
	8	40	0.57	0.81
	9	90	0.44	1.14
	19	5	0.60	1.34
	21	15	0.87	1.60
	31	40	2.30	3.16
	35	13	0.08	0.28
	43	41	0.34	0.76
	44	28	0.64	1.50
	51	21	1.67	2.13
	54	38	0.97	1.26
	57	2	0.0	0.0
	59	52	0.23	0.55
Clothing care and equipment	7	44	0.0	0.0
	8	40	0.01	0.01
	9	90	0.0	0.0
	19	5	0.01	0.02
	21	15	0.0	0.0
	31	40	0.0	0.0
	35	13	0.0	0.0
	43	41	0.0	0.0
	44	28	0.0	0.0
	51	21	0.0	0.0
	54	38	0.01	0.02
	57	2	0.01	0.0
	59	52	0.0	0.0
Clothing construction	7	44	1.24	2.41
	8	40	4.90	3.69
	9	90	2.71	3.70
	19	5	0.80	1.79
	21	15	1.20	2.68
	31	40	5.47	7.41
	35	13	2.92	3.40
	43	41	1.02	2.33
	44	28	0.57	1.03
	51	21	3.52	3.53
	54	38	4.55	3.11
	57	2	0.50	0.71
	59	52	2.13	3.76

TABLE XXI (continued)

Subject areas	School code	Number of pupils	Mean	Standard deviation
Total number of packages used	7	44	13.74	6.44
	8	40	19.77	7.34
	9	90	25.03	6.78
	19	5	25.40	16.27
	21	15	32.13	14.10
	31	40	33.70	11.62
	35	13	33.31	11.05
	43	41	26.80	14.88
	44	28	28.00	28.00
	51	21	22.71	12.36
	54	38	36.61	13.76
	57	2	22.50	24.75
	59	52	28.12	10.80

Pupils' selection of packages as reported in Table XXI showed much variation among pupils in various schools, among pupils within a school, and among subject areas. Total average number of packages used ranged from 13 to 37 for the 13 schools analyzed. However, standard deviations were extremely high showing large variations among pupils within a school as to the total number of packages used.

An average of less than one learning package was selected in the following areas in the majority of schools included: occupational education, marriage, hospitality, dining out, psychological effect of clothing, clothing the family, and clothing care and equipment. Standard deviations for these subject areas were also low for the majority of the schools indicating that individual pupil choice of learning packages in these subject areas was close to average. Learning packages were used the least in the area of clothing care and equipment followed closely by occupational education.

An average of two or less packages were used for related art, consumer education, safety, trends and influences, family living, child development, kitchen efficiency, personal appearance and textiles. Standard deviations were high for these subject areas in the majority of the schools resulting from a skewed distribution. Large numbers of pupils did not use any packages in these areas, while a small number used a few or several packages.

Pupils also chose an average of two or less packages for the subject areas of babysitting and careers. However, standard deviations for these two areas were less than one in a majority of the schools indicating that individual pupil choice of packages in these areas was close to average.

In the areas of resources and decision making, health, and meal planning and preparation, pupils chose an average of four or less packages. Means showed a wide variation among schools in these areas. Standard deviations also showed much variation among pupils within a school for these three areas.

An average of 4.5 learning packages or less were used for the area of nutrition and an average of 5.5 or less for clothing construction. A wide range of means and high standard deviations for pupils in all schools for nutrition and in all but one school for clothing construction gave evidence of large variations both among pupils in various schools and among pupils within schools for these subject areas.

Largest mean number of packages per pupil were found in the areas of self-expression and interaction with nine or less and basic skills with food with an average of seven or less. Again means varied greatly and standard deviations were high for the majority of schools. It should be noted that actual average pupil use of packages for basic skills with food may be even higher if self-expression and interaction CAPSULES were classified according to topics such as self-expression with food or self-expression with crafts. The researcher based this conclusion on the low mean for school number nine for self-expression and interaction as compared to the high mean for school number nine for basic skills with food. The writer had personally classified pupils' responses from this school according to subject areas.

Pupil satisfaction. Pupils from all 19 schools included in the analysis were grouped by school and by grade level (class) to determine if there were significant differences among pupils in various schools or classes for selected factors of satisfaction involved with use of learning packages. The sample included 583 pupils, but not all pupils answered every item.

The responses of pupils by class and school, respectively, were reported in Table XXII below and in Table XXIII on page 75 to the following question: Was there opportunity for small group activity?

TABLE XXII

DISTRIBUTION BY CLASS OF PUPIL RESPONSES REGARDING OPPORTUNITY FOR SMALL GROUP ACTIVITY

Class	Number of pupils	Yes	No
Not given	20	13	5
7	18	14	4
8	18	14	4
9	194	177	16
10	170	148	19
11	86	78	7
12	77	70	7

The total number of pupils in each class was the same throughout this study and was not repeated in following tables.

TABLE XXIII

DISTRIBUTION BY SCHOOL OF PUPIL RESPONSES REGARDING OPPORTUNITY FOR SMALL GROUP ACTIVITY

School code	Number of pupils	Yes	No
7	46	37	7
8	40	37	3
9	90	75	14
16	9	9	
19	5	4	1
21	15	14	1
25	41	39	2
31	40	37	2
32	20	17	3
35	13	12	
38	12	6	6
43	41	32	9
44	28	26	2
46	60	55	4
51	21	20	1
54	38	37	1
55	10	10	
57	2	2	
59	52	46	4
Totals	583	515	60

The null hypothesis that there was no significant difference among pupils in various classes regarding opportunity for small group activity was not rejected based on a chi-square value of 10.20.

A significant difference among pupils in various schools was noted beyond the .01 level with a chi-square value of 42.59. The null hypothesis that there was no significant difference among pupils in various schools as to whether or not there was opportunity for small group activity was rejected. The majority of pupils felt there was opportunity for

small group learning.

Literature reviewed by this author suggested that small group activity spontaneously arranged by the pupils was an asset to package learning. The frequency to which pupils arranged small group activity was analyzed for pupils in various classes in Table XXIV below and for pupils in various schools in Table XXV on page 77.

TABLE XXIV

DISTRIBUTION OF PUPILS BY CLASS SHOWING FREQUENCY OF SELF-ARRANGED SMALL GROUP ACTIVITY

Class	Often	Sometimes	Seldom	Never
Not given	7	4	2	
7	6	5	1	1
8	7	6	1	1
9	60	78	26	14
10	65	62	13	11
11	31	31	8	6
12	26	37	5	2

TABLE XXV

DISTRIBUTION OF PUPILS BY SCHOOL SHOWING FREQUENCY OF SELF-ARRANGED SMALL GROUP ACTIVITY

School code	Often	Sometimes	Seldom	Never
7	18	16	2	1
8	7	24	3	3
9	27	33	10	5
16		7	2	
19				3
21	6	7		1
25	11	22	2	3
31	16	15	6	
32	3	10	1	3
35	8	3		
38		4		3
43	12	12	5	3
44	18	6	1	1
46	36	12	5	2
51	16	3	1	1
54	3	21	10	3
55	1	5	3	1
57		1	1	
59	15	22	4	6
Totals	202	223	56	35

The null hypothesis that there was no significant difference among pupils in various classes in the frequency to which pupils arranged small group activity was tested using chi-square. The chi-square value of 13.01 gave no basis for rejecting the null hypothesis.

A significant difference was found among pupils in various schools in the frequency to which small group activity was self-arranged. With a chi-square value of 140.57, the null hypothesis was rejected. The largest number of pupils responding indicated that small group activity

was self-arranged sometimes.

Responses of pupils by class were reported in Table XXVI below and by school in Table XXVII on page 79 to the following question: Was there opportunity for large group learning?

TABLE XXVI

DISTRIBUTION OF PUPILS BY CLASS SHOWING OPPORTUNITY FOR LARGE GROUP LEARNING

Class	Yes	No
Not given	13	5
7	11	7
8	7	10
9	118	68
10	114	55
11	51	34
12	45	32

TABLE XXVII

DISTRIBUTION OF PUPILS BY SCHOOL SHOWING OPPORTUNITY FOR LARGE GROUP LEARNING

School code	Yes	No
7	20	22
8	25	14
9	48	41
16	4	5
19	1	3
21	6	9
25	36	3
31	35	4
32	12	8
35	1	11
38	6	6
43	11	30
44	13	15
46	49	11
51	18	3
54	38	
55	8	2
57	1	
59	27	24
Totals	359	211

Chi-square evaluation of the null hypothesis that there was no significant difference among pupils in various classes as to whether or not there was opportunity for large group learning yielded a value of 6.63. There was no basis for rejecting the null hypothesis.

The null hypothesis that there was no significant difference among pupils in various schools as to whether or not there was opportunity for large group learning was rejected. The chi-square value of 123.56 was significant beyond the .01 level. The majority of pupils responding

indicated that there was opportunity for large group learning.

Pupils selected the learning situation in which they thought they learned best. Results by class and school, respectively, were summarized in Table XXVIII below and in Table XXIX on page 81.

TABLE XXVIII

DISTRIBUTION OF PUPILS BY CLASS SHOWING SITUATION IN WHICH PUPIL LEARNS BEST

Class	Independent study	Large group	Small group
Not given	6	2	10
7	6	2	10
8	5		12
9	50	28	115
10	64	12	92
11	32	11	42
12	27	10	39

TABLE XXIX

DISTRIBUTION OF PUPILS BY SCHOOL SHOWING SITUATION IN WHICH PUPIL LEARNS BEST

School code	Independent study	Large group	Small group
7	16	3	25
8	12	11	17
9	49	4	36
16		1	8
19	2		3
21	8	1	6
25	4	10	27
31	7	6	26
32	6	3	11
35	6		6
38	3		9
43	9	3	28
44	11	2	15
46	25	7	28
51	7	4	10
54	5	4	29
55	2	2	6
57	2		
59	16	4	30
Totals	190	65	320

The null hypothesis that there was no significant difference among pupils in various classes in their choice of situation in which they learn best was tested using chi-square. The chi-square value of 13.80 with 12 degrees of freedom gave no basis for rejecting the null hypothesis.

The null hypothesis that there was no significant difference among pupils in various schools in their choice of situation in which they learn best was rejected. The chi-square value of 84.32 was significant beyond the .01 level. The majority of the pupils responding indicated they

learned best in small group situations.

Responses of pupils by class to the question of whether or not packages were used in home economics only were summarized in Table XXX.

TABLE XXX

DISTRIBUTION OF PUPILS BY CLASS SHOWING SUBJECTS USING PACKAGES

Class	Home economics only	
	Yes	No
Not given	15	4
7	18	
8	18	
9	146	47
10	124	44
11	62	24
12	53	24

Chi-square was used to test the null hypothesis that there was no significant difference among pupils in various classes as to whether or not home economics was the only subject in which they used learning packages. A significant difference was noted at the .05 level, the chi-square value being 14.37 with six degrees of freedom. A larger proportion of pupils in classes 11 and 12 were using packages in home economics as well as

other subjects than noted for classes seven through ten.

Responses of pupils by school showing whether or not packages were used only in home economics were given in Table XXXI.

TABLE XXXI

DISTRIBUTION OF PUPILS BY SCHOOL SHOWING SUBJECTS USING PACKAGES

School code	Home economics only	
	Yes	No
7	42	1
8	31	9
9	42	48
16	9	
19	4	
21	14	1
25	23	18
31	10	30
32	16	4
35	13	
38	12	
43	39	2
44	28	
46	43	17
51	21	
54	36	2
55	7	3
57	2	
59	44	8
Totals	436	143

A significant difference was noted beyond the .01 level with a chi-square value of 165.34. The null hypothesis that there was no significant

difference among pupils in various schools as to whether or not they used packages in home economics only was rejected. The majority of pupils in schools number nine and 31 were using packages in home economics and in other subjects. A large number of pupils in schools number 25 and 46 were also using packages in other subjects as well as in home economics.

The number of other subjects in which pupils used learning packages in addition to home economics was summarized for pupils by class in Table XXXII below and for pupils by school in Table XXXIII on page 85. The null hypotheses that there were no significant differences among pupils in various classes or schools as to number of subjects in which packages were used was tested using chi-square.

TABLE XXXII

DISTRIBUTION OF PUPILS BY CLASS SHOWING NUMBER OF OTHER SUBJECTS USING LEARNING PACKAGES

Class	Number of other subjects				
	1	2	3	4	5
Not given	2	2			
7					
8					
9	29	12	6		
10	40	4			
11	13	9	2		
12	12	8	2	1	1

Columns headed 4 and 5 were not included in the chi-square analysis.

A significant difference among pupils in various classes as to the number of other subjects using learning packages was noted at the .05 level, the chi-square value being 18.98 with eight degrees of freedom. Therefore, the null nypothesis was rejected. A large majority of pupils in class ten used packages in home economics and only one other subject.

TABLE XXXIII

DISTRIBUTION OF PUPILS BY SCHOOL SHOWING NUMBER OF OTHER SUBJECTS USING LEARNING PACKAGES

School code	Number of other subjects				
	1	2	3	4	5
7	1				
8	8	1			
9	19	20	7	1	1
16					
19					
21	1				
25	13	3	2		
31	24	6			
32	3	1			
35					
38					
43	1	1			
44					
46	14	3			
51					
54	2				
55	2	1			
57					
59	8				
Totals	96	35	10	1	1

Columns headed 4 and 5 were not included in the chi-square analysis.

No significant difference among pupils in various schools as to the number of other subjects in which they used learning packages was noted. The chi-square value was 33.85 with 22 degrees of freedom, therefore, there was no basis for rejecting the null hypothesis. About 75 percent of the pupils used learning packages in home economics classes only. The remaining 25 percent used packages in one to five other classes. Packages were used in home economics and one other class by 67.1 percent of these pupils, in two other subjects by 24.4 percent, and in three to five other subjects by 8.4 percent of these pupils.

Further analyzation of pupil satisfaction with package learning dealt with pupil's rate of learning, individual interest, study in depth, and time spent in completing projects. Each of these factors was evaluated for pupils by class and school using chi-square analysis to test the null hypotheses that there were no significant differences among pupils in various classes or schools as to whether or not learning packages allowed pupils to learn at one's own rate, to learn what interests one's self, to explore or study in depth, and to spend less time completing a project.

Learning at one's own rate was evaluated in Tables XXXIV and XXV on page 87.

TABLE XXXIV

DISTRIBUTION OF PUPILS BY CLASS INDICATING IF PACKAGES ALLOW LEARNING AT ONE'S OWN RATE

Class	Yes	No
Not given	19	
7	16	2
8	13	5
9	170	22
10	159	9
11	79	7
12	70	5

TABLE XXXV

DISTRIBUTION OF PUPILS BY SCHOOL INDICATING IF PACKAGES ALLOW LEARNING AT ONE'S OWN RATE

School code	Yes	No
7	43	2
8	39	1
9	83	5
16	7	1
19	4	
21	14	1
25	31	9
31	36	4
32	18	2
35	13	
38	11	1
43	29	12
44	27	1
46	57	3
51	19	1
54	37	1
55	9	1
57	2	
59	47	5
Totals	526	50

The null hypothesis, there was no significant difference among pupils in various classes as to whether or not packages permitted learning at one's own rate, was rejected. A significant difference was found at the .05 level with a chi-square value of 14.85 with six degrees of freedom.

A significant difference among pupils in various schools was noted beyond the .01 level. Therefore, the null hypothesis was rejected for learning at one's own rate, the chi-square value being 41.79 with 18 degrees of freedom. The majority of pupils responding felt packages permitted them to learn at their own rate.

The question of whether or not packages allow pupils to learn what interests one's self was evaluated according to class and school, respectively, in Table XXXVI below and in Table XXXVII on page 89.

TABLE XXXVI

DISTRIBUTION OF PUPILS BY CLASS INDICATING IF PACKAGES ALLOW LEARNING WHAT INTERESTS SELF

Class	Yes	No
Not given	18	1
7	18	
8	10	8
9	160	33
10	129	39
11	71	15
12	61	14

TABLE XXXVII

DISTRIBUTION OF PUPILS BY SCHOOL INDICATING IF PACKAGES ALLOW LEARNING WHAT INTERESTS SELF

School code	Yes	No
7	44	1
8	38	
9	83	5
16	8	1
19	5	
21	15	
25	29	11
31	33	7
32	9	11
35	12	1
38	8	4
43	25	16
44	28	
46	27	33
51	21	
54	34	4
55	4	6
57	2	
59	42	10
Totals	467	110

The null hypothesis was rejected because there was a significant difference among pupils in various classes as to whether or not packages allow learning what interests one's self. The chi-square value of 16.61 with six degrees of freedom was significant at the .05 level.

The majority of pupils responding indicated that learning packages allow one to learn what interests one's self. However, a significant difference was also noted among pupils in various schools. Therefore, the null hypothesis was rejected, the chi-square value being 139.31 which

was significant beyond the .01 level.

Opportunity to explore or study in depth is often an optional feature built into learning packages. Pupil evaluation of this factor was recorded in Table XXXVIII below for pupils by class and in Table XXXIX for pupils by school on page 91.

TABLE XXXVIII

DISTRIBUTION OF PUPILS BY CLASS INDICATING IF PACKAGES ALLOW LEARNING IN DEPTH

Class	Yes	No
Not given	18	1
7	16	1
8	11	6
9	155	35
10	133	36
11	77	9
12	65	11

The difference among pupils in various classes was significant at the .05 level with a chi-square value of 12.64 with six degrees of freedom. The null hypothesis was rejected that there was no significant difference among pupils in various classes as to whether or not packages allowed one to study in depth.

TABLE XXXIX

DISTRIBUTION OF PUPILS BY SCHOOL INDICATING IF PACKAGES ALLOW LEARNING IN DEPTH

School code	Yes	No
7	41	2
8	37	2
9	83	6
16	8	1
19	4	1
21	14	1
25	32	7
31	34	6
32	15	5
35	11	2
38	7	5
43	22	18
44	24	4
46	41	19
51	18	2
54	30	8
55	9	1
57	2	
59	43	9
Totals	475	99

The majority of pupils in all schools combined indicated there was opportunity to study in depth. However, a significant difference was found among pupils in various schools beyond the .01 level. The chi-square value of 55.56 with 18 degrees of freedom served to reject the null hypothesis for pupils in various schools as to whether or not packages permitted learning in depth.

Time spent completing a project was included by this researcher as a factor of satisfaction because pupils in a traditional classroom setting often report waiting to use equipment and waiting for others to catch up as unsatisfactory aspects of home economics. Pupil responses to this factor were reported in Table XL below and in Table XLI on page 93 for pupils by class and school, respectively.

TABLE XL

DISTRIBUTION OF PUPILS BY CLASS INDICATING IF PACKAGES ALLOW PUPILS TO SPEND LESS TIME COMPLETING PROJECTS

Class	Yes	No
Not given	14	5
7	15	3
8	4	14
9	104	84
10	74	93
11	48	37
12	32	42

The null hypothesis was rejected for pupils by class since there was a significant difference among pupils in various classes as to whether or not packages allowed pupils to spend less time completing a project than in a traditional classroom situation. The chi-square value was 24.60 with six degrees of freedom. The majority of pupils in classes 8, 10, and 12 did not feel that less time was spent completing a project when using

learning packages than in a traditional classroom setting.

TABLE XLI

DISTRIBUTION OF PUPILS BY SCHOOL INDICATING IF PACKAGES ALLOW PUPILS TO SPEND LESS TIME COMPLETING PROJECTS

School code	Yes	No
7	36	8
8	11	28
9	53	35
16	7	2
19	3	2
21	6	9
25	23	16
31	23	16
32	9	11
35	5	7
38	6	6
43	7	34
44	18	9
46	30	30
51	12	7
54	16	21
55	5	5
57	2	
59	19	32
Totals	291	278

A significant difference among pupils in various schools for time spent in completing a project was noted beyond the .01 level, the chi-square value being 63.36 with 18 degrees of freedom. Therefore, the null hypothesis was also rejected for pupils by school. A rather slim majority

of all pupils responding to this question felt they could spend less time completing a project when using learning packages than in a traditional classroom setting.

Pupils were asked to list advantages and disadvantages found in the learning package method. Advantages listed in this open-end question were recorded in Table XLII on pages 95 and 96. Rank order of the ten most frequently listed advantages was recorded in Table XLIII on page 97.

TABLE XLII

ADVANTAGES LISTED BY PUPILS ACCORDING TO TOTAL SCHOOL RESPONSE

Advantages	School numbers																		Totals
	7	8	9	16	19	21	25	31	32	35	38	43	44	46	51	54	55	57	59	
Personal advantages:																				
Learn at own rate	20	28	43	4	2	10	16	21	13	7	7	20	17	33	18	13	3	2	35	312
Learn what interests self	23	19	44	1	3	10		13	1	7		12	13	1	10	17	1		24	198
Study in depth	6	7	2	1		3		2				2	2	4	1	1	2		3	36
Study independently	1	2	8	1		2	3	2	5	2	1		4	7		5			4	47
Meet own needs														1		1	1			3
Assume responsibility (Own initiative)			1			2		3	2				1			1			1	10
Package characteristics:																				
Clear directions			2				2		1					1						6
No tests			1			1				5									1	8
Interesting	3	1	3					2	1			2		1					3	16
Learn specifics						1			2											3
Learn in various ways			1							1									1	3
Use media alone								1					1							2
Convenient							4				1	2								7
Easier		3	4				8	1		2						2		1	1	22
Classroom management:																				
Work out of class		1	1			1						3					1			7
No assignments								1		1										2
No homework								1		3										4

TABLE XLII (continued)

Advantages	School numbers																		Totals
	7	8	9	16	19	21	25	31	32	35	38	43	44	46	51	54	55	57	59	
Work together			2				1	1			1	1	1				1			8
No lectures			1		3	1		7	1								1	1		15
Use library			3																	3
Contract for grade desired		1	4			1				1					3	5				15
Results of use:																				
Better grades																			1	1
Worked harder	2	1				2	1	1	1			2	1	6		2				19
Faster	3	2	4		2		6	1	1					3	1	3		2	2	30
Learn more	1		3	1		2	1	5	2		2		1	13	3	5	1			40
No competition			1			1				1					2					5
Advantages for teacher as seen by pupils:																				
Less help needed																1				1
Easier for teacher									1			1								2
Teacher's help available						1								1						2
Miscellaneous:																				
No advantages			1	1								9			1					12
																			Total responses	839

The 839 total responses to this open-end question were contributed by 544 pupils.

TABLE XLIII

RANK ORDER OF TEN MOST FREQUENTLY LISTED ADVANTAGES

Advantages	Number of pupils listing	Percent of total responses
Learn at own rate	312	37.2
Learn what interests self	198	23.6
Study independently	47	5.6
Learn more	40	4.8
Study in depth	36	4.3
Faster	30	3.6
Easier	22	2.6
Worked harder	19	2.3
Interesting	16	1.9
No lectures	15	1.8
Contract for grade	15	1.8
Total percentage for ranked advantages		89.5
Total percentage for unranked advantages		10.5
	Total	100.0

Percent of total simply represents the percent of total responses [839] to the question of advantages noted by pupils from using packages. It does not reflect the total number of pupils included in the survey nor the percentage of pupils listing the particular advantage.

The advantage of learning at one's own rate received over one-third of the total number of responses. This advantage was ranked first by pupils in 12 of the 19 schools responding. Learning what interests one's self received almost one-fourth of the total number of responses to this question. Three of the schools ranked learning what interests one's self as first according to total number of responses. In two of the schools, rate and interest tied for the most responses. Pupils in one school ranked learning at one's own rate and faster in a first-place tie, while

another school ranked learning what interests one's self and no lectures as tied for first. All other advantages listed received less than 5 percent of the total responses.

According to the response to the question of advantages found in using learning packages as determined by pupils, learning at one's own rate and learning what interests one's self can be assumed to be the main advantages of this method of learning. However, it would appear that pupils in each school may evaluate advantages differently. For example, 13 pupils in one school learned more, indicating that factors such as previous experiences, classroom atmosphere, teacher competence and similar factors may influence pupil reaction to package learning.

Disadvantages found by pupils in package learning were listed in Table XLIV on pages 99 and 100. Rank order of the ten most frequently listed disadvantages was recorded in Table XLV on page 101.

TABLE XLIV

DISADVANTAGES LISTED BY PUPILS ACCORDING TO TOTAL SCHOOL RESPONSE

Disadvantages	School numbers																		Totals
	7	8	9	16	19	21	25	31	32	35	38	43	44	46	51	54	55	57	59	
Personal disadvantages:																				
Cannot choose interests			2				4	5	1							1				13
Cannot go at own rate	2	1	7		2	2	2	4	3	1		7	2	12			1		3	49
Procrastinate (initiative)		3	3		1				4			1	1	8	1	1			10	33
Package characteristics:																				
Too standardized				1					2											3
Unrealistic				1								3				1			3	8
Hard to find information	2		4	1	2	3	3				2	1	2	3	1	3	1		7	33
Too many questions			3		4							2				2				11
Too specific	2		2		2		1												2	9
Repetitious			2			1		2				2		1		3			1	12
Too much writing			2				1	1											5	9
Too easy											2									2
Boring		4	1		2				3			3	2	5	1	2			5	28
Too hard		3	3				1	1	3			5	1	4		6			1	28
No notes																		1		1
No tests								1		1										2
Too broad		1										1		2		1				5
Vagueness of activities			1																	1
Too much work	3	1	5		2	6	4	5	2			6	4	6	4	4	3		9	64
Prerequisites			2										1			2				5
Too much reading									1											1

TABLE XLIV (continued)

Disadvantage	School numbers																		
	7	8	9	16	19	21	25	31	32	35	38	43	44	46	51	54	55	57	59	
Classroom management:																				
Cheating											2	1		4						7
No class participation	6	7	7			6	4	4	7	3	1	1		1	4	3	3			57
Grading requirements		2	10			5		5		5		14	5	9	10	2		1	18	86
Noise and disruptions	1		1			1														3
Lack of evaluation time												2	1				1			4
No time for depth								1											2	3
Use tapes with others								1												1
Results of use:																				
Do not learn as much		15					1		3	5		6		2		4	2		4	42
Do not understand	2		2				5	2	3	1		2	4	6	2	3	1			33
Miss important learnings			3			2	1		2	1		1		1		2				13
Get behind	4	6	2				3			1			1	3		5				25
Do not work as hard		2	9					5				1		4	7		1			29
No competition			1	3						1										5
Lack background knowledge								1								1				2
Disadvantages related to teacher:																				
Teacher too busy	2	2	13			1	1	4	7	1			1		1	1	1		4	39
Easier for teacher																1				1
Miscellaneous:																				
Dislike packages			1		4						2	3								10
No disadvantages		1	1	1				2		1					1		1			8
																			Total responses	715

The 715 total responses to this open-end question were given by 478 pupils.

TABLE XLV

RANK ORDER OF TEN MOST FREQUENTLY LISTED DISADVANTAGES

Disadvantages	Number of pupils listing	Percent of total responses
Grading requirements	86	12.0
Too much work	64	9.0
No class participation	57	8.0
Cannot go at own rate	49	6.9
Do not learn as much	42	5.9
Teacher too busy	39	5.5
Procrastinate (initiative)	33	4.6
Hard to find information	33	4.6
Do not understand	33	4.6
Do not work as hard	29	4.1
Total percentage for ranked disadvantages		65.2
Total percentage for unranked disadvantages		34.8
	Total	100.0

Percent of total simply represents the percent of total responses [715] to the open-end question of disadvantages noted by pupils from using packages. It does not reflect the total number of pupils included in the survey nor the percentage of pupils listing the particular disadvantage.

Frequency of listing disadvantages was more uniformly distributed than frequency for listing advantages. No disadvantage received over 12 percent of the total as compared to 37.2 percent for the leading advantage. None of the ten most frequently checked disadvantages received less than 4.1 percent as compared to a low of 1.8 percent for the tenth most frequently listed advantage. This may indicate that disadvantages resulting from use of packages are a more individualized matter.

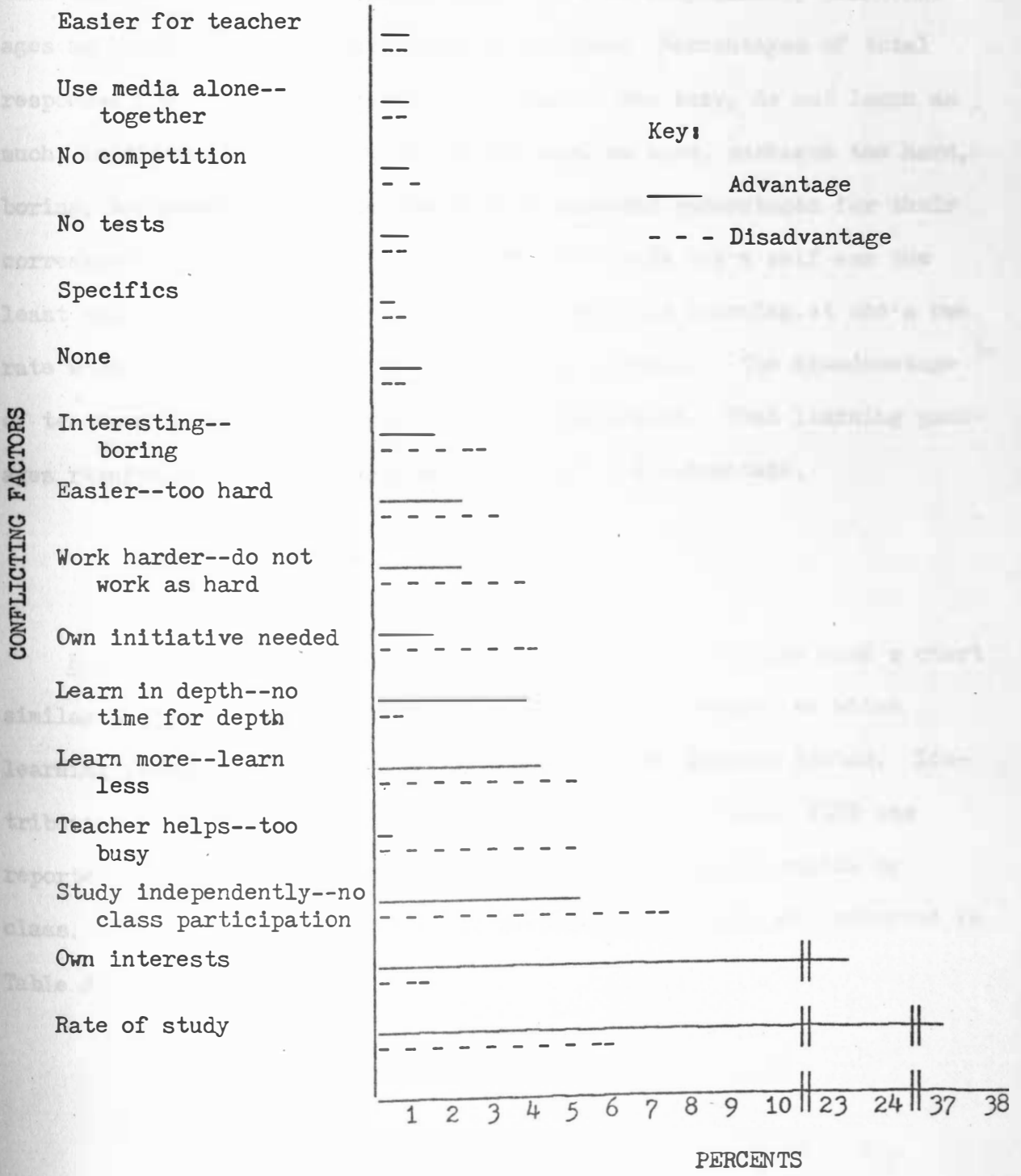
Individual school total response was also more varied and distributed. Only four schools ranked grading requirements as the leading disadvantage.

Pupils in three other schools tied grading requirements with do not learn as much, too much work, do not work as hard, and no notes. No class participation was ranked first by pupils in two schools and was tied for first with too much work by pupils in two schools. Each of the following disadvantages ranked first in one school: teacher too busy, too many questions, dislike packages, too hard, do not understand, no competition, and cannot go at own rate. Pupils in one school ranked hard to find information, too much writing, and cheating as tied for first. Classroom strategy seems to vary from school to school and may affect the disadvantages listed by the pupils.

Percentages of total responses for conflicting advantages and disadvantages listed by pupils were compared in Figure 3 on page 103.

FIGURE 3

COMPARISONS OF PERCENTAGES OF TOTAL RESPONSES FOR CONFLICTING ADVANTAGES AND DISADVANTAGES LISTED BY PUPILS



Percentages of total advantages for study in depth, learning what interests one's self, and study at one's own rate were considerably higher than the percentages of disadvantages. In nine comparisons, disadvantages as listed by pupils outweighed advantages. Percentages of total responses for no class participation, teacher too busy, do not learn as much, initiative, procrastinate, do not work as hard, packages too hard, boring, too specific, and no competition exceeded percentages for their corresponding advantages. Learning what interests one's self was the least challenged advantage. Learning in depth and learning at one's own rate were also strong advantages of package learning. The disadvantage of teachers being too busy was the least challenged. That learning packages require self-initiative was also a strong disadvantage.

Evaluation methods used with learning packages. Pupils used a chart similar to the one used by teachers to describe the extent to which learning packages were evaluated by the evaluation devices listed. Distribution of pupil responses by schools summarized in Table XLVI was reported on pages 105 to 114. No analyzation was done of pupils by class. Chi-square analysis of pupil responses by schools was reported in Table XLVII on page 115.

TABLE XLVI

DISTRIBUTION OF PUPIL RESPONSE BY SCHOOL SHOWING EXTENT TO WHICH EVALUATION DEVICES WERE COMBINED WITH PACKAGES

Evaluation device	School code	Always	Sometimes	Seldom	Never
Homework	7	3	15	19	7
	8	6	28	4	1
	9	11	41	20	14
	16		1	7	1
	19	4	1		
	21	3	10	2	
	25	3	27	5	6
	31	3	8	7	21
	32	5	7	6	2
	35		8	4	1
	38	1	2	2	1
	43	15	14	6	6
	44	3	18	2	5
	46	14	29	8	9
	51	4	9	4	3
	54	7	19	8	4
	55		5	1	3
	57	1	1		
	59	26	18	5	2
Worksheets	7	12	21	7	5
	8	6	22	7	4
	9	26	29	14	18
	16		2	5	2
	19	3		1	1
	21	5	7	2	1
	25	7	29	5	
	31	6	5	5	23
	32	6	12	2	
	35	7	5	1	
	38	3	5	1	
	43	9	9	3	19
	44	14	11	1	2
	46	33	18	6	3
	51	8	9	1	1
	54	13	18	5	1
	55	1	6	2	1
	57	1	1		
	59	32	14	2	2

TABLE XLVI (continued)

Evaluation device	School code	Always	Sometimes	Seldom	Never
Oral evaluation	7	10	23	6	4
	8	2	5	19	11
	9	1	54	20	10
	16	6	3		
	19	2	1	1	1
	21	10	5		
	25	7	17	6	10
	31	15	18	7	
	32	3	3	8	5
	35		6	6	1
	38	2	1		1
	43		13	13	14
	44	24	1	2	1
	46	4	6	31	19
	51	1	6	8	2
	54	2	9	13	14
	55		8	1	
	57	1	1		
	59	6	28	15	3
Notebooks	7	4	15	9	15
	8	3	12	6	17
	9	6	16	18	47
	16	4	1	1	3
	19	3	1	1	
	21	3	4	2	6
	25	4	18	4	14
	31	6	9	15	10
	32	3	3	3	11
	35			5	8
	38		1	1	1
	43	9	5	3	24
	44	2	15	5	5
	46	43	10	4	2
	51	3	2	3	9
	54	3	10	3	22
	55	1	3	3	3
	57	1	1		
	59	3	3	15	27

TABLE XLVI (continued)

Evaluation device	School code	Always	Sometimes	Seldom	Never
Diary	7		2	5	36
	8		2	2	33
	9	1	8	7	71
	16				9
	19	3		1	1
	21			3	12
	25	1	4	2	34
	31			2	35
	32	2	3	3	12
	35		1	1	11
	38				3
	43		2	4	35
	44	2	2	3	21
	46	1	5	3	49
	51		1		15
	54		6	4	28
	55		1		8
	57			1	1
	59	1	2	3	43
Themes	7		5	8	29
	8	1	12	9	16
	9	1	26	15	42
	16				9
	19	3		1	1
	21	1	1	1	12
	25	3	8	10	20
	31		4	3	31
	32	2	6	5	7
	35		2	1	9
	38				3
	43	2	6	3	30
	44	1	3	12	12
	46	1	10	7	41
	51	1	1	3	12
	54	1	5	7	23
	55		1	2	6
	57		1		1
	59		19	9	21

TABLE XLVI (continued)

Evaluation device	School code	Always	Sometimes	Seldom	Never
Problem-situation tests	7	5	11	9	14
	8	2	21	3	12
	9	5	42	12	27
	16	1	6		2
	19	4	1		
	21		9	5	1
	25	1	10	9	21
	31	1	9	5	23
	32	5	9	3	3
	35	1	6	5	1
	38				3
	43	3	15	4	18
	44		13	3	12
	46	7	18	12	22
	51		7	6	4
	54	2	14	12	8
	55		4	3	2
	57		2		
	59	3	29	11	8
Essay tests	7	4	16	6	17
	8	2	13	7	16
	9	5	19	19	44
	16		2	3	4
	19	4	1		
	21	2	5	1	7
	25	3	11	7	20
	31	1	5	8	23
	32	2	5	6	6
	35	1	5	1	5
	38				3
	43		5	9	14
	44	2	3	7	15
	46	5	8	13	33
	51		1	6	8
	54	2	14	8	14
	55		9	1	
	57		2		
	59		8	4	32

TABLE XLVI (continued)

Evaluation device	School code	Always	Sometimes	Seldom	Never
Objective tests	7	3	9	6	22
	8		20	8	11
	9	7	28	17	34
	16		6	1	2
	19	4	1		
	21	2	4	6	3
	25	18	19	1	3
	31	1	5	11	18
	32	14	5	1	
	35	1	6	2	4
	38	4	3		1
	43	3	14	7	17
	44	2	11	5	10
	46	45	13	1	
	51	2	12	4	2
	54	4	16	8	9
	55		10		
	57		2		
	59	1	12	14	22
Home projects	7	5	27	10	3
	8	8	18	8	6
	9	6	44	29	9
	16		1	5	2
	19	3	1	1	
	21	3	8	2	2
	25	15	20	1	5
	31	21	16	2	1
	32	6	10	2	2
	35	6	7		
	38	8	3		
	43	4	16	6	15
	44		14	8	5
	46	20	16	14	10
	51	3	8	9	
	54	1	24	8	4
	55	2	6	2	
	57		2		
	59	8	32	8	3

TABLE XLVI (continued)

Evaluation device	School code	Always	Sometimes	Seldom	Never
Class projects	7	20	19	2	4
	8	3	19	11	7
	9	24	48	10	6
	16	2	3	3	1
	19	4		1	
	21	3	6	2	4
	25	16	21	3	1
	31	10	19	8	3
	32	11	5	3	1
	35	2	6	1	4
	38	5	3		
	43	2	13	7	19
	44	8	14	2	4
	46	19	25	8	7
	51	8	4	6	
	54	4	20	8	6
	55	2	8		
	57	1	1		
	59	10	21	15	5
Rating scales	7	11	8	6	19
	8	5	9	6	15
	9	14	35	17	19
	16				8
	19	3	1		1
	21	3	3	5	4
	25	4	9	10	17
	31	17	13	3	7
	32	2	4	12	2
	35	1	5	3	1
	38			1	2
	43	3	12	9	17
	44	1	14	7	6
	46	18	12	11	19
	51		6	7	4
	54	11	13	5	9
	55		2	2	5
	57		1	1	
	59	12	14	12	9

TABLE XLVI (continued)

Evaluation device	School code	Always	Sometimes	Seldom	Never
Checklists	7	4	15	6	16
	8	1	10	9	17
	9	6	46	15	17
	16	3	1		5
	19	3		2	
	21	2	4	6	3
	25	4	8	9	17
	31	10	6	6	16
	32	5	3	10	1
	35		4	5	2
	38	6	3		
	43	6	21	4	9
	44	6	11	7	3
	46	11	10	9	28
	51	3	7	6	1
	54	5	15	8	9
	55		1	2	5
	57		2		
	59	11	12	16	9
Self-evaluation	7	5	12	8	7
	8	10	10	5	5
	9	14	27	9	6
	16	1	1	2	2
	19	3		1	
	21	2	4		1
	25	7	10		5
	31	6	10	4	7
	32	1	5	2	
	35	3	6	2	
	38				2
	43	4	18	6	2
	44	6	6	2	2
	46	10	6	5	6
	51	4	6	3	
	54	7	11	6	4
	55		3	2	1
	57	1	1		
	59	1	9	9	6

TABLE XLVI (continued)

Evaluation device	School code	Always	Sometimes	Seldom	Never
Help form goals	7	7	19	5	11
	8	6	28		3
	9	27	39	11	6
	16		7		2
	19	4			
	21	6	7	2	
	25	10	19	5	6
	31	3	21	2	11
	32	2	12	3	3
	35	2	7	3	1
	38			1	2
	43	3	15	12	10
	44	10	15	2	
	46	12	22	12	10
	51	5	6	4	3
	54	8	18	8	3
	55	1	7	2	
	57	1	1		
	59	17	19	9	2
Check own work	7	9	13	7	14
	8	10	17	5	5
	9	16	41	12	13
	16		3	4	2
	19	4	1		
	21	5	6	3	1
	25	6	17	8	9
	31	8	8	9	13
	32	5	11	2	2
	35		9	3	
	38	2	1	2	
	43	6	17	3	15
	44	6	12	5	4
	46	12	18	9	16
	51	3	3	1	8
	54	4	14	9	9
	55		6	3	1
	57		1		1
	59	8	15	12	11

TABLE XLVI (continued)

Evaluation device	School code	Always	Sometimes	Seldom	Never
Find own strengths and weaknesses	7	14	18	7	4
	8	13	21	2	1
	9	22	45	13	3
	16	1	5	1	2
	19	4	1		
	21	9	4	2	
	25	13	18	5	4
	31	12	10	8	7
	32	5	14		1
	35	5	6	1	1
	38	2		1	2
	43	6	17	8	9
	44	11	11	6	
	46	21	24	7	5
	51	8	3	6	1
	54	8	21	8	1
	55	2	6	1	1
	57	1	1		
	59	17	21	6	4
Decide when ready to advance	7	17	14	5	6
	8	17	17	2	1
	9	33	32	9	10
	16		2	4	3
	19	3	2		
	21	11	3	1	
	25	9	13	6	11
	31	14	10	5	7
	32	8	11		1
	35	7	3	2	
	38	1	1		1
	43	6	16	9	10
	44	14	10	3	
	46	34	18	2	3
	51	7	10		2
	54	13	13	4	5
	55	3	5		2
	57	1	1		
	59	19	21	4	3

TABLE XLVI (continued)

Evaluation device	School code	Always	Sometimes	Seldom	Never
Pretest	7	13	27	2	1
	8	7	24	6	2
	9	32	49	5	2
	16				8
	19	4			
	21	2	11	2	
	25	13	17	7	4
	31	19	19	2	
	32	17	3		
	35	7	6		
	38	11	1		
	43	12	29		
	44	9	19		
	46	46	11	2	1
	51	11	8	1	
	54	20	16		2
	55	1	8		
	57	1	1		
	59	17	31	1	1
Posttest	7	23	19		1
	8	12	23	4	
	9	51	36	1	
	16	1	2	2	4
	19	4			
	21	6	9		
	25	14	15	6	6
	31	21	18	1	
	32	17	3		
	35	8	5		
	38	10	2		
	43	23	18		
	44	21	5		2
	46	49	9	1	1
	51	15	4	1	
	54	26	9	2	1
	55	3	6		
	57	1	1		
	59	26	21	2	1

TABLE XLVII

VALUE OF CHI-SQUARE SHOWING DIFFERENCES AMONG PUPILS BY SCHOOL IN THE EXTENT TO WHICH VARIOUS EVALUATION DEVICES WERE COMBINED WITH PACKAGES

Evaluation device	Chi-square value
Homework	186.48**
Worksheets	216.77**
Oral evaluation	321.84**
Notebooks	244.73**
Diary	135.47**
Themes	141.37**
Problem-situation tests	139.17**
Essay tests	127.57**
Objective tests	325.12**
Home projects	177.39**
Class projects	143.97**
Rating scales	126.61**
Check lists	151.99**
Self-evaluation	68.11
Help form goals	115.45**
Check own work	82.82**
Find own strengths and weaknesses	83.09**
Decide when ready to advance	96.91**
Pretest	341.35**
Posttest	186.70**

With 54 degrees of freedom

*Significant at or beyond .05 level
**Significant at or beyond .01 level

The null hypothesis that there were no significant differences among pupils in various schools in the extent to which the various evaluation devices were combined with learning packages was tested using chi-square. Results were reported in Table XLVII on page 115. Significant differences were found beyond the .01 level for all evaluation devices except self-evaluation. No significant difference was found for self-evaluation, but this may be due to the structure of the questionnaire. Some pupils did not respond to the general self-evaluation device but only to the four related devices which followed. The null hypothesis was rejected, with this one limitation.

Chi-square analysis of evaluation devices combined with learning packages as described by pupils served to point out the presence of significant differences among schools. The distribution of total responses by pupils in all schools combined showing the extent to which each device was used was given in Table XLVIII on page 117.

TABLE XLVIII

DISTRIBUTION OF TOTAL PUPIL RESPONSE SHOWING EXTENT TO WHICH VARIOUS EVALUATION DEVICES WERE COMBINED WITH PACKAGES

Evaluation device	Always	Sometimes	Seldom	Never
Homework	109	261	110	86
Worksheets	192	223	70	83
Oral evaluation	96	208	156	96
Notebooks	101	129	101	224
Diary	11	39	44	457
Themes	17	110	96	325
Problem-situation tests	40	226	102	181
Essay tests	35	132	106	261
Objective tests	111	196	92	158
Home projects	119	273	115	67
Class projects	154	255	90	72
Rating scales	105	161	117	164
Check lists	86	179	120	158
Self-evaluation	85	145	66	56
Help form goals	124	262	81	73
Check own work	104	212	96	126
Find own strengths and weaknesses	174	246	82	46
Decide when ready to advance	217	202	56	65
Pretest	242	280	28	22
Posttest	331	205	20	16

Deciding when ready to advance and posttest were always used by a larger number of pupils than the number who used them to any other extent. A majority of the pupils responding never used diary and themes. Notebooks, essay tests, and rating scales were never used by a larger number of pupils than the number who used them to any other extent. More pupils sometimes, as compared to always, seldom, or never, were evaluated using the following 13 devices: homework, worksheets, oral evaluation, problem-situation tests, objective tests, home projects, class projects, check lists, self-evaluation, help form own goals, check own work, determine own strengths and weaknesses, and pretest.

Learning aids used with packages. Pupil response by schools indicating if various learning aids were used independently, were used with teacher assistance, or were not used at all were recorded in Table XLIX on pages 119 to 128. Chi-square analysis was reported in Table L on page 129.

TABLE XLIX

DISTRIBUTION OF PUPIL RESPONSE BY SCHOOL SHOWING WHETHER OR NOT LEARNING AIDS WERE USED AND HOW THEY WERE USED WITH PACKAGES

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Films	7	13	24	9
	8	12	12	6
	9	14	48	28
	16	5	1	3
	19	4	1	
	21	1		14
	25	26	1	14
	31	16	13	11
	32	4	14	2
	35	4	6	3
	38			12
	43	6	15	20
	44	7	13	8
	46	49	7	4
	51	6	13	2
	54	19	14	5
	55	4		6
	57	1	1	
	59	9	17	26
Tapes	7	9	35	2
	8	5	31	4
	9	10	79	1
	16			9
	19	3	1	1
	21	2	13	
	25	6	4	31
	31	2	38	
	32	4	1	15
	35	3	10	
	38			12
	43	6	30	5
	44	4	20	4
	46	30	6	24
	51	2	15	4
	54	11	24	3
	55			10
	57		2	
	59	9	42	1

TABLE XLIX (continued)

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Filmstrips	7	9	34	3
	8	7	23	10
	9	13	58	19
	16	6	1	2
	19	3	1	1
	21	2	1	12
	25	30	2	9
	31	6	28	6
	32	4	15	1
	35	3	9	1
	38			12
	43	7	17	17
	44	5	19	4
	46	21	38	1
	51	3	11	7
	54	19	16	3
	55		8	2
	57		1	1
	59	10	30	12
Pictures and clippings from magazines	7	12	13	21
	8	7	27	6
	9	5	65	20
	16	4	4	1
	19	4	1	
	21	3	11	1
	25	11	15	15
	31	6	28	6
	32	1	14	5
	35	3	6	4
	38			12
	43	4	26	11
	44	4	17	7
	46	11	28	21
	51	4	9	8
	54	5	23	10
	55	3	2	5
	57	1	1	
	59	5	37	10

TABLE XLIX (continued)

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Charts	7	3	14	29
	8	6	12	22
	9	5	34	51
	16	5	1	3
	19	3	2	
	21		5	10
	25	15	10	16
	31	8	17	15
	32	2	17	1
	35	1	5	7
	38	4	3	5
	43	5	14	22
	44	3	12	13
	46	8	20	32
	51	2	6	13
	54	14	11	13
	55	4	3	3
	57			2
	59	5	22	25
Models	7		2	44
	8	1	3	36
	9	2	11	77
	16		1	8
	19	3	2	
	21	1	1	13
	25	8	3	30
	31	4	1	35
	32	3	8	9
	35			13
	38			12
	43	5	2	34
	44	2	6	20
	46	4	12	44
	51	1	2	18
	54	5	8	25
	55			10
	57			2
	59	1	5	46

TABLE XLIX (continued)

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Graphs	7	1	7	38
	8	1	5	34
	9	1	22	67
	16	2		7
	19	3	1	1
	21		1	14
	25	10	3	28
	31	9	7	24
	32	3	6	11
	35	1		12
	38	3	3	6
	43	5	2	34
	44	2	3	23
	46	3	7	50
	51		3	18
	54	5	12	21
	55	2		8
	57			2
	59	1	6	45
Slides	7	2	2	42
	8	4	6	30
	9	8	24	58
	16	1		8
	19	3	1	1
	21		1	14
	25	10	1	30
	31	2	1	37
	32	3	16	1
	35		1	12
	38			12
	43	5	4	32
	44	4	6	18
	46	2	6	52
	51	4	5	12
	54	6	5	27
	55	1		9
	57		1	1
	59	4	6	42

TABLE XLIX (continued)

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Opaque projector	7		2	44
	8	6	4	30
	9	5	7	78
	16			9
	19	3	1	1
	21			15
	25	12	1	28
	31	1		39
	32	5	7	8
	35		1	12
	38			12
	43	5	1	35
	44	2	4	22
	46	26	1	33
	51	4	3	14
	54	13	2	23
	55	1		9
	57		1	1
	59	1	2	49
Overhead projector	7		1	45
	8	10	7	23
	9	6	5	79
	16	1		8
	19	3		2
	21	1		14
	25	34		7
	31	28	6	6
	32	4	9	7
	35	2	3	8
	38			12
	43	3	1	37
	44	4		24
	46	25	4	31
	51	6	6	9
	54	22	6	10
	55	9		1
	57	1	1	
	59	10	10	32

TABLE XLIX (continued)

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Microscopes	7		1	45
	8	1	3	36
	9	3	5	82
	16			9
	19	1		4
	21			15
	25	6		35
	31	5	14	21
	32	1	1	18
	35			13
	38			12
	43	1	1	39
	44	2		26
	46	1	5	54
	51		2	19
	54		2	36
	55	1	1	8
	57			2
	59			52
Chalkboard	7	2	2	42
	8	9	4	27
	9	6	9	75
	16	6	1	2
	19	4	1	
	21	1		14
	25	29	6	6
	31	20	3	17
	32	3	5	12
	35	3	2	8
	38	2		10
	43	3	4	34
	44	3	4	21
	46	18	3	39
	51	6	4	11
	54	22	6	10
	55	8		2
	57	1		1
	59	5	6	41

TABLE XLIX (continued)

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Phonograph records	7	5	15	26
	8	7	7	26
	9	3	7	80
	16			9
	19	3		2
	21			15
	25	12	4	25
	31	1		39
	32	2	3	15
	35	1		12
	38			12
	43		2	39
	44	2		26
	46	3	1	56
	51	3	1	17
	54	7	5	26
	55			10
	57			2
	59	2	4	46
Radio	7		2	44
	8	1	4	35
	9	1	12	77
	16			9
	19	3		2
	21	1		14
	25	4	2	35
	31			40
	32	2	1	17
	35			13
	38			12
	43	2	3	36
	44	1	4	23
	46			60
	51		2	19
	54			38
	55			10
	57			2
	59	1	2	49

TABLE XLIX (continued)

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Television	7		4	42
	8	1	4	35
	9	1	21	68
	16			9
	19	1		4
	21	2	1	12
	25	3	4	34
	31		1	39
	32	1	2	17
	35		1	12
	38			12
	43	1	5	35
	44	1	6	21
	46	4	2	54
	51		3	18
	54		3	35
	55		1	9
	57			2
	59	1	2	49
Bulletin boards	7	4	12	30
	8	6	15	19
	9	10	13	67
	16	5	2	2
	19	4	1	
	21	1	4	10
	25	14	5	22
	31	17	9	14
	32	3	8	9
	35	3	5	5
	38			12
	43	6	3	32
	44	6	7	15
	46	24	20	16
	51	5	8	8
	54	8	12	18
	55	6	4	
	57		2	
	59	9	7	36

TABLE XLIX (continued)

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Text books	7	10	29	7
	8	8	28	4
	9	8	70	12
	16	6	3	
	19	3	1	1
	21	3	12	
	25	20	14	7
	31	5	33	2
	32	1	15	4
	35	3	8	2
	38	3	6	3
	43	10	29	2
	44	2	25	1
	46	13	42	5
	51	6	12	3
	54	4	26	8
	55	3	4	3
	57	1	1	
	59	5	41	6
Reference books	7	10	28	8
	8	9	28	3
	9	7	70	13
	16	4	4	1
	19	3	2	
	21	3	12	
	25	15	15	11
	31	3	33	4
	32	2	17	1
	35	3	9	1
	38	1	4	7
	43	9	31	1
	44	2	24	2
	46	12	39	9
	51	6	10	5
	54	5	32	1
	55	2	8	
	57	1	1	
	59	5	42	5

TABLE XLIX (continued)

Learning aid	School code	Used with teacher assistance	Used independently	Did not use
Mimeographed and dittoed worksheets	7	7	13	26
	8	10	17	13
	9	4	40	46
	16	5	2	2
	19	4	1	
	21		8	7
	25	28	7	6
	31	5	8	27
	32	6	13	1
	35	2	4	7
	38		2	10
	43	7	15	19
	44	4	12	12
	46	17	28	15
	51	5	6	10
	54	10	21	7
	55	4	4	2
	57	1		1
	59	6	28	18
Other (pamphlets)	7			46
	8			40
	9		1	89
	16	1		8
	19			5
	21			15
	25			41
	31		3	37
	32			20
	35			13
	38			12
	43			41
	44			28
	46	1	2	57
	51	1		20
	54		2	36
	55			10
	57			2
	59	2	4	46

TABLE L

VALUE OF CHI-SQUARE SHOWING DIFFERENCE AMONG PUPILS BY SCHOOL AS TO WHETHER OR NOT LEARNING AIDS WERE USED AND HOW THEY WERE USED

Learning aid	Chi-square value
Films	225.45**
Tapes	396.21**
Filmstrips	219.56**
Pictures and clippings from magazines	116.20**
Charts	101.10**
Models	101.62**
Graphs	100.04**
Slides	149.38**
Opaque projector	161.56**
Overhead projector	286.97**
Microscopes	113.62**
Chalkboard	188.35**
Phonograph records	127.39**
Radio	112.42**
Television	57.88*
Bulletin boards	130.85**
Text books	87.75**
Reference books	97.41**
Mimeographed or dittoed work sheets	156.30**
Other (pamphlets)	48.07

With 36 degrees of freedom

*Significant at or beyond .05 level
**Significant at or beyond .01 level

Chi-square analysis of pupil use of learning aids tested the null hypothesis that there were no significant differences among pupils in various schools as to whether or not learning aids were used and how they were used with learning packages. Results were recorded in Table L on page 129. Significant differences were found beyond the .01 level for all learning aids except television and pamphlets. A significant difference beyond the .05 level was noted for pupil use of television. No significant difference was found for pamphlets, an aid listed by pupils in seven schools as an open-end answer. The null hypothesis was rejected.

To illustrate differences found among pupils in various schools, the author cited two schools. Pupils in school number 38 did not use six of the learning aids used by pupils in all other schools, including films, filmstrips, pictures and clippings from magazines, slides, overhead projector, and bulletin boards. These pupils also did not use eight other learning aids. However, these eight aids were not used by pupils in some other schools as well. The majority of pupils in school number 46 indicated they used the following learning aids either independently or with teacher assistance: films, filmstrips, pictures and clippings from magazines, bulletin boards, text books, reference books, and mimeographed or dittoed worksheets. Radio was the only learning aid not used by pupils in school number 46. Pupils in school number 38 used a total of six aids with learning packages, while pupils in school number 46 used 19 aids.

The distribution of total responses by pupils in all schools combined showing whether or not learning aids were used and how they were used with packages was reported in Table LI on page 132. The majority of pupils used tapes, filmstrips, pictures, and clippings from magazines independently. Films were used equally with teacher's assistance and independently. However, the author feels there may have been confusion of terms involved and that some pupils equated films with filmstrips. Mimeographed or dittoed worksheets were used independently as often as they were not used. The following 12 aids were not used with learning packages by the majority of the pupils: models, graphs, slides, opaque projector, overhead projector, microscopes, chalkboard, phonograph records, radio, television, bulletin boards, and pamphlets.

Very few students helped prepare any of the aids listed. A few had helped collect pictures from magazines or made charts to report information they had gained. A few had also prepared bulletin boards.

TABLE LI

DISTRIBUTION OF TOTAL PUPIL RESPONSE SHOWING WHETHER OR NOT LEARNING AIDS WERE USED AND HOW THEY WERE USED

Learning aid	Used with teacher assistance	Used independently	Did not use
Films	200	200	183
Tapes	106	351	126
Filmstrips	148	312	123
Pictures and clippings from magazines	93	327	163
Charts	93	208	282
Models	40	67	476
Graphs	52	88	443
Slides	59	86	438
Opaque projector	84	37	462
Overhead projector	169	59	355
Microcsopes	22	35	526
Chalkboard	151	60	372
Phonograph records	51	49	483
Radio	16	32	535
Television	16	60	507
Bulletin boards	131	137	315
Text books	114	399	70
Reference books	102	409	72
Mimeographed and dittoed worksheets	125	229	229
Other (pamphlets)	5	12	566

CHAPTER V

COMPARISON OF PUPIL AND TEACHER EVALUATION OF LEARNING PACKAGES

That an innovation may not be viewed similarly by pupils and teachers should not be considered impossible in education. The purpose of this chapter was to briefly ascertain what, if any, differences existed between pupil and teacher evaluations of learning packages as used in home economics classes in South Dakota.

Subject areas. It was difficult to compare pupil omissions with areas not taught by teachers because there were large variations among pupils within a school as to the number of packages used. Large numbers of pupils did not use any packages in an area, while a small number used a few or several packages. However, both pupils[1] and teachers[2] indicated very limited use of packages in the area of occupational education. A large majority of teachers used learning packages to teach clothing care and equipment, but very few pupils reported that they had completed packages in this area. The majority of teachers used learning packages to teach basic skills with food and self-expression and interaction, the areas receiving the highest average pupil use. The majority of teachers did not use packages to teach the area of marriage for which pupils used an average of less than one package.

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[1] Refer to Table XXI, pp. 62-71.

[2] Refer to Table VII, p. 36.

Use of packages. The majority of the teachers[3] and pupils[4] felt there was opportunity for small group and large group activity.

Satisfaction. The advantage of learning at one's own rate was ranked as the leading advantage by both teachers[5] and pupils.[6] Pupils ranked learning what interests one's self second, while teachers ranked this advantage sixth. Pupils ranked the advantage that packages were interesting in the ninth place, while teachers ranked it tenth. None of the ten disadvantages most frequently listed by pupils[7] were listed most frequently by the teachers.[8] Disadvantages listed by both tended to be more personalized toward the individual role of pupil or teacher.

Evaluation methods used with packages. Comparison of majority response by pupil and teacher showing extent to which various evaluation devices were used with packages was made in Table LII on page 135.

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[3]Refer to Table VI, p. 35.

[4]Refer to Table XXIII, p. 75.

[5]Refer to Table XIII, p. 47.

[6]Refer to Table XLIII, p. 97.

[7]Refer to Table XLV, p. 101.

[8]Refer to Table XV, p. 50.

TABLE LII

COMPARISON OF MAJORITY RESPONSE BY PUPIL AND TEACHER SHOWING EXTENT TO WHICH VARIOUS EVALUATION DEVICES WERE USED WITH PACKAGES

	Majority response	
Evaluation device	By pupil	By teacher
Worksheets	Sometimes	Always--sometimes
Self-evaluation	Sometimes	Always
Notebooks	Never	Sometimes
Essay tests	Never	Sometimes
Rating scales	Never	Sometimes

Variations were noted between teacher and pupil description of evaluation methods used with packages. These were listed in Table LII. However, it was not possible to make any statistical analysis to determine if the difference was significant. Significant differences were found among pupils in various schools which may account for these variations.

CHAPTER VI

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

SUMMARY

The problem. One purpose of this study was to determine the extent to which home economics teachers in South Dakota were using learning packages. A second purpose was to determine teacher and pupil reaction to package teaching and learning.

Importance of the problem. Learning packages have become a recognized innovation in home economics instruction. By determining the extent to which learning packages are being used by South Dakota home economics teachers and pupils and their reaction to them, the researcher hoped to assess ways in which use of this innovation could be strengthened.

Procedure. This study was based on data obtained from a review of literature pertaining to the problem and from a descriptive and statistical analysis of teacher and pupil questionnaires.

Review of literature. Emphasis on independent study has been spearheaded by the current focus on the individual student. Independent study embodies student responsibility for learning including development of skills for learning as well as continuing interest.

If independent study is to be individualized, it must be geared to an individual pupil's rate of learning, interests, ability level, needs,

and learning style. Much pupil responsibility is implied along with teacher-pupil planning.

Innovative administrative management of groups of students, although complementary, is not the key element in the successful implementation of independent study. Successful use of classroom methods such as learning packages is more essential than administrative techniques.

Learning packages are an innovative technique used to promote independent study. As the name implies, a package contains all the information a student needs to pursue independent study of one main concept or idea. Behavioral objectives, diversified learning aids and learning activities, evaluation, and opportunity for study in depth are vital components.

Because independent study as a means of individualizing instruction is relatively new, research is limited. A study which compared an individualized instruction program with the conventional program concluded that one method was not better or worse than the other. Another study found no significant difference in achievement between independent and traditional groups researched. School satisfaction, study habits, and library skills were found significantly improved in favor of the independent study group in a New York study. Several studies emphasized the importance of pupil-teacher interaction, especially for the lower-ability group students. The low correlation between general ability and achievement in independent study programs emphasized the need for a method other than a measure of intelligence for predicting pupil success with independent study.

Additional reported results of independent study as a means of individualizing instruction included the positive aspects of increased teacher satisfaction and pupil enjoyment. Negative aspects reported were evidence of cheating, indifference on the part of pupils, and lack of real desire to pursue a subject in depth.

The teacher's role in an independent study program expands to one of planner, resource person, counselor, and administrator. In-service training and workshops can assist teachers in developing the necessary skills.

FINDINGS

Teacher Survey

General information. Of the 200 home economics teachers in South Dakota responding to the teacher questionnaire, 72 or 36 percent indicated they had used learning packages during the 1970-71 school year. The largest number of teachers using packages were teaching in schools with enrollment over 500 pupils, although there were some teachers using packages in schools of smaller enrollment categories as well. Teachers ranged in experience from zero to 36 years. There was no significant difference among teachers with varying years of teaching experience as to whether or not they used packages. Teachers using learning packages were assisted by teacher aids more often than teachers not using packages.

Analyzation of subject area scope for all teachers responding showed subject areas not taught at any grade level in a school. Occupational education was omitted in about 60 percent of the schools. All other subject areas were omitted by teachers in less than one-third of the

schools. Clothing construction was the only subject area taught in all of the schools responding.

Use of packages. The majority of home economics teachers who used learning packages indicated that other departments in their school were also using packages and that their school's schedule allowed for small and large group instruction, independent study, and varying times for these three techniques.

Subject area scope in relation to teaching methods employed by teachers using learning packages showed that marriage, careers, self-expression and interaction, and dining out were omitted by approximately 25 percent of those teachers. Clothing the family, teenager's world, babysitting, trends and influences, related art and health were omitted by 11-16 percent of these teachers. About 10 percent did not teach resources and decision making. When teachers using packages were compared with all teachers combined, higher percentages of omissions were recorded for package teachers for marriage, careers, self-expression and interaction, and babysitting. However, all teachers combined reported higher percentages of omissions for occupational education, trends and influences, related art, safety, child development and behavior, and hospitality.

A larger number of teachers taught the area of marriage by methods other than packages than who taught it using packages. Basic skills, meal planning and preparation, clothing care and equipment, clothing construction, nutrition, and consumer education were taught by packages by at least twice as many teachers as taught these areas by other methods.

CAPSULES were the major source or type of learning package used by

home economics teachers in South Dakota. Self-constructed packages were used by at least one teacher in all subject areas except dining out. Packages were combined with other methods for teaching an entire unit by the largest number of teachers.

A highly significant difference was found among teachers in the extent to which they used various teaching methods with learning packages. Laboratory experience was used frequently by the largest number of teachers and was the only method used by all teachers. A majority of teachers frequently used problem-solving experiences, teacher demonstrations, home experiences, and small and large group instruction. Lectures, pupil demonstrations, field trips, brain-storming, panel discussions and role-playing were seldom used by at least half of these teachers.

Evaluation practices of teachers using learning packages. A significant difference was found in the extent to which home economics teachers used the various evaluation techniques with learning packages. Pretest, posttest, and self-evaluation were used by all teachers. A larger number of teachers used most devices sometimes as compared to always, seldom, and never. Anecdotal records, behavioral logs, and themes were never used by a larger number of teachers than teachers who used them to any other extent.

Teacher satisfaction. Advantages most frequently listed by teachers were largely advantages seen for the pupil using learning packages. Learning at one's own rate and according to one's ability in addition to increased student responsibility all received over 10 percent of the total

responses. More time to help individual pupils received about 6 percent of the total number of teacher responses and was the highest ranked personal advantage for teachers. Increased preparation time was the leading disadvantage listed by teachers. More teacher challenge; pupil initiative; attention to individual needs, abilities and interests; and range and depth of materials covered all contributed to teacher satisfaction. More teaching materials used; more time involved in preparation, teaching, and evaluation may tend to decrease teacher satisfaction.

The majority of teachers using learning packages had used them one to two years. About 89 percent of those using packages planned to continue using them the next school year. Improvements in the packages themselves and in accompanying teaching-learning aids were suggested most frequently.

Pupil Survey

Pupils were selected on the basis of a random sampling of the 72 teachers using learning packages.

Use of learning packages. Analyzation of subject area scope included only those 13 schools which utilized free choice of CAPSULES. Mean and standard deviation evaluation showed much variation among schools, pupils within a school, and among subject areas. Learning packages were used the least in the areas of clothing care and equipment and occupational education. Packages were used most extensively in the areas of self-expression and interaction and basic skills with food. However, a wide range of means showed variation among schools as to the number of packages used in these areas. Standard deviations were high

for the majority of schools in these same areas indicating that pupil use of packages varied greatly within a school. Pupils used an average of two or less packages for most subject areas with variations prominent among pupils within a school and among schools.

The majority of pupils indicated there was opportunity for small group activity. However, a significant difference was found among schools in providing this activity. That small group activity was sometimes arranged by the pupils themselves received the largest number of responses. Again a significant difference was found among schools.

A significant difference was found among schools in providing opportunity for large group learning. The majority of the pupils indicated there was opportunity for large group learning.

The majority of pupils using learning packages indicated that they learned best in small group situations as compared to independent study or large group situations. A significant difference was noted among pupils in various schools.

There was a significant difference noted among pupils by class and school as to whether or not packages were used only in home economics. However, 75 percent of the pupils responding used packages in home economics only.

Pupil satisfaction. The majority of pupils responding felt packages permitted one to learn at one's own rate, to learn what interests one's self, to study in depth, and to spend less time completing a project. Significant differences were noted among pupils by class and school for all of these factors of satisfaction.

Learning at one's own rate and learning what interests one's self were the outstanding advantages listed by pupils in package learning. There was less agreement concerning outstanding disadvantages, with pupils tending to list a wider variety of disadvantages. Grading requirements were, however, the leading disadvantage. Classroom strategy seems to vary from school to school and may affect pupils' responses.

Evaluation methods used with packages. Significant differences were noted among pupils by school as to the extent that various evaluation devices were used with learning packages. Total response by pupils showed that deciding when ready to advance and posttest were always used for evaluating learning packages by a larger number of pupils than the number of pupils who used them to any other extent. More pupils were evaluated using all other devices sometimes than always, seldom, or never.

Learning aids used with packages. Significant differences were found among pupils by school in the use of learning aids combined with learning packages. Total response by pupils showed that the majority of pupils used tapes, filmstrips, pictures and clippings from magazines independently. Films were used equally independently and with teacher assistance. Mimeographed or dittoed worksheets were used independently as often as they were not used. Twelve aids were not used by the majority of pupils. Very few students helped prepare any of the aids listed.

Comparison of Pupil and Teacher Evaluation of Learning Packages

Pupils and teachers generally evaluated learning packages similarly. Both indicated the least use of packages in the area of occupational education and limited use for the area of marriage. Corresponding high use of packages in the areas of basic skills with food and self-expression and interaction was noted for teachers and pupils. Pupil use of packages for clothing care and equipment was less than corresponding use as indicated by teachers.

Pupils and teachers agreed on opportunities provided for small and large group activity. A significant difference among pupils by school accounts for those teachers who did not feel their school's schedule provided these opportunities.

Learning at one's own rate was the most frequently listed advantage by both pupils and teachers. Learning what interests one's self and the fact that packages are interesting were the only other advantages ranked among the leading ten by both teachers and pupils. Disadvantages tended to be viewed more personally from the pupil or teacher role.

Conflicting responses by pupil and teacher as to the extent of use were noted for the following evaluation devices: worksheets, self-evaluation, notebooks, essay tests, and rating scales. Differences among schools may account for these conflicts.

CONCLUSIONS

Based on findings reported in this chapter and in more detail in Chapters III through V, the author derived the following conclusions:

1. School size, years of teacher experience and utilization of

teacher aids were not determining factors in home economics teachers' use of learning packages.

2. Home economics teachers in South Dakota were teaching a fairly broad program with only one subject area, occupational education, omitted in more than one-third of the schools.

3. Learning packages were combined with various scheduling techniques indicating that this method can be used successfully with or without innovative scheduling.

4. Subject area scope differences between teachers using packages and all teachers combined did not appear to be significant, but statistical analyzation was limited.

5. CAPSULES were the major type of learning package used by South Dakota home economics teachers. The researcher believed this may be due to the close proximity of the source and that teachers need to be made more aware of other sources of packages available. Also, in-service training and workshops may be needed to help teachers interested in developing their own packages and in revising purchased ones.

6. Since the majority of teachers using learning packages combined them with other teaching methods, this researcher noted that continuing emphasis must be given to methods of instruction in teacher-education programs. No one method of instruction should be considered a panacea or as an island method.

7. Teachers and pupils reported using a fairly wide variety of evaluation devices. However, significant differences were found which point out the need for teacher training in this area which provides experiences in developing and using various techniques.

8. Learning packages seemed to favor the pupil in terms of advantages. Teachers should be made aware of both the limitations and contributions of this method of instruction in order to determine if this method is complementary to their goals as a teacher.

9. Pupils in most schools used rather small numbers of packages in all subject areas. This researcher questions whether learnings of pupils using packages were as broad as those taught by traditional methods and sees a need for more research in this area.

10. Significant differences among schools in many of the factors evaluated led to the assumption that teacher organization and implementation of the package program greatly affect results. Not all teachers can teach more effectively with packages.

11. Significant differences were noted among pupils by class for several factors evaluated. Factors such as previous experience with package learning, maturity, and background subject knowledge may be involved.

12. It appeared to this researcher that new learning aids, especially audio-visual aids, were used frequently with packages and that aids more traditionally used such as chalkboard, bulletin board, and pamphlets were seldom used. It would seem that in days of limited school budgets and inadequate facilities that ways should be explored to utilize some of the aids considered standard equipment in most classrooms.

13. Very little use was made of student help in preparing teaching-learning aids. Perhaps student help is an alternative to employment of teacher aids where such cannot be afforded.

RECOMMENDATIONS

The researcher recognized that this study in no way gave conclusive evidence to support the theory that any one method is superior to another. Further research is recommended in the following areas:

1. A more specific subject area device should be utilized to determine if there is any difference in subject area scope between teachers using packages and teachers using the traditional method. Provision should be made for determining if a subject area is omitted by a teacher of if home economics is not offered at a particular grade level.

2. Further research is needed to determine if learning packages are more effective than traditional classroom teaching. Factors such as pupil achievement, class level, study skills, background knowledge needed, and satisfaction should be included in such research.

3. A more specific device should be found to evaluate subject area scope selected by pupils using packages. Comparisons with pupils in traditional classrooms should be made to determine if there is any significant difference in scope of study. A long-range study of pupils through the total high school home economics program may be helpful.

4. Pupil evaluation in general should be more comprehensive. Some precaution should be taken to insure a higher rate of return than that obtained by this researcher.

5. This researcher found no information on evaluation of the package itself. Ways should be developed to test effectiveness

of the package in terms of behavioral objectives, evaluation of these objectives, provision for individualization of learning and other similar elements.

Learning packages as a means of individualizing independent study have made their debut in home economics classes in South Dakota. The route they will take in the future will undoubtedly be as diversified as the one they have taken thus far. Continued research, teachers willing to experiment and to assess results of their teaching practices, and teacher-training programs which provide insights and skills needed to implement innovations will contribute to the future role of learning packages.

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APPENDIX

COVER LETTER FOR TEACHER QUESTIONNAIRE

CONTRACT time? No, it's only the beginning of the second semester--try a CAPSULE to perk up your teaching. And before too much time has eLAPsed, won't you HELP me?

The enclosed questionnaire is designed to determine to what extent the learning package approach is being used in home economics classes throughout South Dakota at the junior and senior high levels. This survey is being conducted in connection with the College of Home Economics at South Dakota State University, and with the advice of Dean Frances Hettler; Mrs. Ardyce Gilbert, Department of Home Economics Education; and Dr. Lee Tucker, statistician. It is hoped that this study will reveal the extent of teacher and pupil acceptance.

I would appreciate your cooperation in completing the questionnaire and returning it by February 15, using the enclosed addressed envelope. Your responses will be treated as one of a total response, since it is not my intention to evaluate one particular school. Your identity will remain confidential.

Thank you for your assistance in this project. Watch for a report at your fall conference.

Sincerely,

Mrs. Marlene Brands

USE OF LEAR ING PACKAGES IN SOUTH DAKOTA HOME ECONOMICS PROGRAMS

TEACHER QUESTIONNAIRE

I. General Information

A. School_____

1. Number of pupils enrolled in junior high_____ grades _____ to _____; senior high _____

B. Teacher_____

1. Number of years taught _____
2. Number of years in this school_____
3. Number of teacher aids _____
4. Complete the chart below to indicate whether the subject matter area is taught at the 7th, 8th, 9th, 10th, 11th, or 12th grade level (s).

Subject areas	Grade level	Subject areas	Grade level
Related art		Careers	
Self-expression and interaction		Nutrition	
Consumer education		Kitchen efficiency	
Resources and decision making		Basic skills	
Health		Meal planning and preparation	
Safety		Hospitality	
Trends and influences		Dining out	
Occupational education		Personal appearance	
Babysitting		Psychological effect of clothing	
Teenager's world		Clothing the family	
Marriage		Textiles	
Family living		Clothing care and equipment	
Child development and behavior		Clothing construction	

II. Use of Learning Packages*

For purposes of this study, "a learning package is a self-instructional unit developed for learning one basic concept or idea. . . ." Each package contains behavioral objectives telling the student what to do, materials to use, and the minimum level of performance.

*Twyla Shear and Elizabeth Ray, "Home Economics Learning Packages (HELPS)," Journal of Home Economics, 61:768, December, 1969.

A. Do you use the package approach in any of the subject areas listed in Question I-B4? Yes __________ No__________

If you answer no, please disregard the remaining questions and return this portion in the self-addressed envelope. Thank you for your participation in this project.

- -

B. Is the home economics department the only department in your school using learning packages? Yes __________ No__________ (This does not refer to elementary K-6 teachers.)
   1. If not, indicate the number of other secondary teachers using this method (__________) and the total number of teachers on the staff at the junior and/or senior high level (__________).

C. Check if your school's schedule allows for any of the following:
   _____ small group instruction
   _____ large group instruction
   _____ independent study
   _____ varying times for the above three.

D. To what extent are you using packages during the 1970-71 school year?

   1. Using the chart on the following page, fill in the left-hand side first. If you do not teach a subject area this year, place an X in the first column. If you do not use the packages for a particular subject area taught, place an X in the second column to indicate use of another method. In the column marked source, indicate if the package is self-constructed, UNIPAC, CONTRACT, CAPSULE, LAPs, HELPs, or TLU. Then in the right-hand columns indicate with an X the extent to which you use packages for that subject area.

   2. If the packages charted were not self-constructed, did you modify any of the purchased ones? Yes__________ NO__________

   3. Place a plus mark by the subject area in the preceding chart which you are best prepared to teach. Place a minus mark by the subject area you feel least prepared to teach.

   4. If possible, when returning your questionnaire include copies of the following packages:
      a. An original or modified package
      b. A package used in each of the two subject areas marked as directed in D3.

Subject areas (Commonalities and outline topics from Curriculum Guide)	Subject area not taught this year	Subject area taught by methods other than packages	Number of packages using this year	Source	Package combined with other methods for entire unit	Package used alone for entire unit	Package combined with other methods for part of unit	Package used alone for part of unit
Related art								
Self-expression and interaction								
Consumer education								
Resources and decision making								
Health								
Safety								
Trends and influences								
Occupational education								
Babysitting								
Teenager's world								
Marriage								
Family living								
Child development and behavior								
Careers								
Nutrition								
Kitchen efficiency								
Basic skills								
Meal planning and preparation								
Hospitality								
Dining out								
Personal appearance								
Psychological effect of clothing								
Clothing the family								
Textiles								
Clothing care and equipment								
Clothing construction								

. Total number of packages used ____

E. Indicate to what extent you are using the following teaching methods with packages this year.

Teaching method	Frequently	Seldom	Never
Problem-solving experiences			
Lectures			
Laboratory experiences			
Teacher demonstrations			
Pupil demonstrations			
Field trips			
Brain-storming			
Panel discussion			
Role-playing			
Home experiences			
Small group instruction			
Large group instruction			
Others (please list):			

III. Evaluation

Using the following chart, indicate the extent to which you are using the various methods of evaluation with packages.

Evaluation device	Always	Sometimes	Seldom	Never
Homework				
Worksheets				
Recitation				
Anecdotal record				
Notebooks				
Behavioral logs				
Themes				
Rating scales				
Check lists				
Pretest				
Posttest				
Essay test				
Problem-situation tests				
Objective tests				
Pupil self-evaluation				
Others (please list):				

IV. Teacher satisfaction

A. List the main advantages and disadvantages you find in using packages.

Advantages	Disadvantages

B. Following is a list of factors related to package teaching. Compare each factor with traditional classroom teaching and place an X to specify more, same, or less than the traditional method.

Factor	More	Same	Less
Teaching materials used			
Cost of materials used			
Time involved in preparing materials			
Time involved in teaching			
Teacher challenge			
Pupil initiative			
Attention to individual needs			
Attention to individual abilities			
Attention to individual interests			
Effective evaluation of objectives			
Time spent in evaluating			
Range of materials covered			
Depth of materials covered			

D. When did you start using packages? _____

E. Do you plan to use packages next year? Yes_____ No_____
If so, what improvements, if any, will you make?

Please list the number of students who are using packages this school year. _____

SOUTH DAKOTA STATE UNIVERSITY
BROOKINGS, SOUTH DAKOTA 57006

COLLEGE OF HOME ECONOMICS

On about February 1, 1971, Mrs. Marlene Brands will be sending out a questionnaire to all home economics teachers in South Dakota. Mrs. Brands is conducting a survey to determine the extent to which home economics teachers are using learning packages and their reactions to them. The study is in partial fulfillment of the requirements for her MS degree in Home Economics Education.

We are concerned that home economists do effective teaching. Research such as Mrs. Brands is doing gives us needed information. Respondents will remain anonymous and we hope you will encourage your teacher(s) to cooperate.

Thank you for your support. The results will be made available to the participating teachers.

Sincerely,

Frances M. Hettler, Dean
College of Home Economics

FMH/cs

LETTER MAILED TO SUPERINTENDENTS OF TEACHERS
INCLUDED IN SAMPLE SURVEY OF PUPILS

Recently your home economics instructor, [name] , participated in a survey to determine the extent to which home economics teachers are using learning packages and their reaction to them. Her classes have been selected as part of a sample survey to determine pupil reaction to learning packages. Twenty teachers were chosen at random to compose the sample.

Pupil questionnaires will be mailed to the teacher about March 20. In order to obtain unbiased and anonymous answers, your personal help is needed. The teacher and pupils will be given the following instructions: The last two pupils to complete the questionnaire will please seal the manilla envelope provided for all completed questionnaires and bring to the superintendent [or principal] for mailing.

Thank you for your cooperation. You and the instructor will receive a brief abstract of results of this study when completed.

Sincerely,

Mrs. Marlene Brands

LETTER MAILED TO TEACHERS INCLUDED
IN SAMPLE SURVEY OF PUPILS

Your response to the questionnaire on use of learning packages was appreciated. Your classes have been selected as part of a sample survey to determine pupil reaction to learning packages. Twenty teachers were chosen at random to compose the sample from the 72 who indicated they use packages.

[number] pupil questionnaires will be mailed to you about March 20. In order to obtain unbiased and anonymous answers, it is important that the following instructions be given: The last two pupils to complete the questionnaire will please seal the manilla envelope provided for all completed questionnaires and bring to the superintendent [or principal] for mailing. Enclosed is an instruction sheet for administering the questionnaire to pupils who have used or are using packages this school year as indicated in the teacher questionnaire.

Thank you for your cooperation. You will receive a brief abstract of the results of this study when completed.

Sincerely,

Mrs. Marlene Brands

INSTRUCTIONS FOR ADMINISTERING PUPIL QUESTIONNAIRE ON LEARNING PACKAGES

To the Pupil: (To be read or posted and explained to the students)

1. Do not sign your name. Your teacher will not see your answers. Please answer all questions honestly and completely. Your answers will be used as part of a study on learning packages conducted with the cooperation of the College of Home Economics at South Dakota State University.

2. Do not ask any questions. If you do not understand something, write a note on the questionnaire near the item you do not understand.

3. When you have completed the questionnaire, place in the manilla envelope provided.

4. The last two pupils to complete the questionnaire will please seal the manilla envelope and bring to the superintendent for mailing. (Or to the principal if your teacher indicates.)

To the Teacher:

1. If you wish to have your principal complete the mailing, be sure to explain the survey to him. Your superintendent has been informed via letter.

2. If you have more than one class using packages, you may wish to use a temporary manilla envelope for each class and reserve the stamped one for the superintendent's use. Proceed with each envelope as directed above in item number four. However, request the person mailing to remove the questionnaires and insert in the mailing envelope.

3. Or if your pupils do not meet together as a class, please arrange to have them answer this in their homerooms. Provide a temporary envelope and instructions for administering for each homeroom teacher.

4. To avoid paying increased postage rates, return by March 30.

USE OF LEARNING PACKAGES IN SOUTH DAKOTA HOME ECONOMICS PROGRAMS

PUPIL QUESTIONNAIRE

Your class has been selected as part of a sampling study of the use of learning packages (also called CAPSULES, CONTRACTS, TLU, UNIPAC, HELPs, LAPs) in South Dakota home economics programs. Your cooperation in answering this questionnaire is appreciated. Please do not sign your name in order that your answers can remain unidentified.

I. Use of Learning Packages

Place an X in the column behind each subject area in which you used packages this school year. List the number of packages you have completed in each area so far this year.

Subject area	I used packages	Number of packages completed
Related art		
Self-expression and interaction		
Consumer education		
Resources and decision making		
Health		
Safety		
Trends and influences		
Occupational education		
Babysitting		
Teenager's world		
Marriage		
Family living		
Child development and behavior		
Careers		
Nutrition		
Kitchen efficiency		
Basic skills with food		
Meal planning and preparation		
Hospitality		
Dining out		
Personal appearance		
Psychological effect of clothing		
Clothing the family		
Textiles		
Clothing care and equipment		
Clothing construction		

Total number of packages completed _____

Today's date _____

Circle your grade in school: 7 8 9 10 11 12

II. Satisfaction

A. Was there opportunity for small group activity? Yes___ No___
If yes, was this activity arranged by the pupils?
_____Often _____Sometimes _____Seldom _____Never

B. Was there opportunity for large group learning? Yes___ No___

C. In which situation do you think you learn best?
_____Independent study
_____Large group
_____Small group

D. Is home economics the only class in which you use packages?
Yes_____ No_____
If not, list the other subjects in which you use packages.

E. Do learning packages allow you to:
1. Learn at your own speed? Yes_____ No_____
2. To learn what interests you? Yes_____ No_____
3. Explore or study in detail one particular interest?
Yes_____ No_____
4. Spend less time completing a project? Yes_____ No_____

F. Briefly list what you have found to be the main advantages and disadvantages of the learning package method.

Advantages Disadvantages

III. Learning Aids

Following is a list of audio-visual learning aids. If you used the aid with your learning packages, place an X in the column to the right. If you used this aid without assistance from the teacher or teacher aid, place an X in the column headed "Used independently".
In the column to the far right, if you helped prepare the aid state briefly what you did.
Circle the three aids which you used most often.

Learning aid	Used	Used independently	Helped prepare
EXAMPLE: snapshots	X	X	Collected, made into bulletin board
Films			
Tapes			
Filmstrips			
Pictures and clippings from papers, magazines			
Charts			
Models			
Graphs			
Slides			
Opaque projector			
Overhead projector			
Microscopes			
Chalkboard			
Phonograph records			
Radio			
Television			
Bulletin boards			
Text books			
Reference books			
Mimeographed or dittoed worksheets			
Others: (please list)			

IV. Evaluation

The following chart lists methods of evaluation. Place an X in one of the four columns to the right which best describes how frequently your packages were evaluated by each method.

Evaluation device	Always	Sometimes	Seldom	Never
Homework				
Worksheets				
Oral evaluation				
Notebooks				
Diary				
Themes				
Problem-situation tests				
Essay tests				
Objective tests (true-false, matching, completion)				
Home projects				
Class projects				
Rating scales				
Checklists				
Self-evaluation:				
1. Help form goals				
2. Check own work				
3. Find own strengths and weaknesses				
4. Decide when ready to advance				
Pretest				
Posttest				

FOLLOW-UP LETTER MAILED TO SELECTED TEACHERS
INCLUDED IN SAMPLE SURVEY OF PUPILS

Think back to Spring of 1971. You will recall administering a pupil questionnaire on learning packages. You had indicated earlier on the teacher questionnaire that you had [number] pupils using packages. Of the [number] questionnaires mailed to you, [number] were not returned. Please check the appropriate response below to indicate why they were not returned. I need this information in order to validate my results.

Once again, your prompt HELP is appreciated.

Sincerely,

Mrs. Marlene Brands

_____ Pupils were absent.

_____ Not all of the total number indicated previously had used packages.

_____ Teacher selected participating pupils according to class, or etc. (Please indicate.)

_____ Other: (Please specify.)

COUNTY MAP OF SOUTH DAKOTA SHOWING THE SIX AREA VOCATIONAL SCHOOL REGIONS AND THE LOCATIONS OF EXISTING VOCATIONAL SCHOOLS